


SCOPE OF APPLICATION All Project/Engineering		SHT/SHTS 1 / 11
Responsibility: 제어SW플랫폼1팀	AUTOSAR Det User Manual	DOC. NO
AUTOSAR Det User Manual		

Document Change Histroy				
Date (YYYY-MM-DD)	Ver.	Editor	Chap	내용(개정 전 -> 개정 후)
2016-04-29	1.0.0	Yj Yun	전체	• Initial Creation
2017-05-30	1.0.1	Ek Kim	5.2.2	• ChangeLog 수정
2020-12-28	1.0.6.0	Ek Kim	5.2.2	• ChangeLog 수정
2022-08-31	1.0.7.0	SY Kim	5.2.2	• ChangeLog 수정
2023-03-07	1.0.8.0	KT Kim	5.2.2	• ChangeLog 수정
2023-04-06	1.0.8.1	KT Kim	5.2.2	• ChangeLog 수정 • ‘양산시 모듈 제거’ 코멘트 제거

<p>일반(Anyuser)/김수연 책임 클래스오토 사탑 본 문서는 HyundaiAutoever 의 정보자산이므로 무단으로 전체 및 복제할 수 없으며, 이를 위반할 시에는 당사 사규 및 관련 법규에 의해 제재를 받을 수 있습니다.</p> <p>2<sup>nd</sup> Edition Date: 05 30, 2016</p>	<p>File Name AUTOSAR Det User Manual.pdf</p>	<p>Creation <b>YJ Yun</b> 2014/06/19</p>	<p>Check <b>JH Baek</b> 2016/05/30</p>	<p>Approval <b>SI Lee</b> 2016/05/30</p>
Document Management System				

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## 1 Overview

본 문서는 Det 사용을 위해 AUTOSAR 플랫폼 사용할 때, 사용자가 파라미터 설정 또는 시스템 설계를 할 때 주의하거나 참고할 사항을 제공한다. Autosar 표준 SRS/SWS 를 기반으로 작성 되었으며, 모듈 사용시 보다 자세한 기능적인 설명이 필요한 경우, 아래 Reference 문서를 참고한다.

설정관련 Category 의 해석은 다음과 같다.

- Changeable (C): User 에 의해서 설정 가능한 항목
- Fixed (F): User 에 의한 변경이 불가능한 항목
- NotSupported (N): 사용되지 않는 항목

## 2 Reference

Sl. No.	Title	Version
1.	AUTOSAR BSW Service API Guide.doc	1.0.0 or later
2.	AUTOSAR_SWS_DiagnosticEventManager.pdf	4.2.0
3.	AUTOSAR_SWS_DevelopmentErrorTracer.pdf	2.2.0
4.	AUTOSAR_SWS_FunctionInhibitionManager.pdf	3.2.0
5.	AUTOSAR_SWS_DiagnosticCommunicationManager.pdf	4.2.0
6.		
7.		

### 3 Acronyms and abbreviations

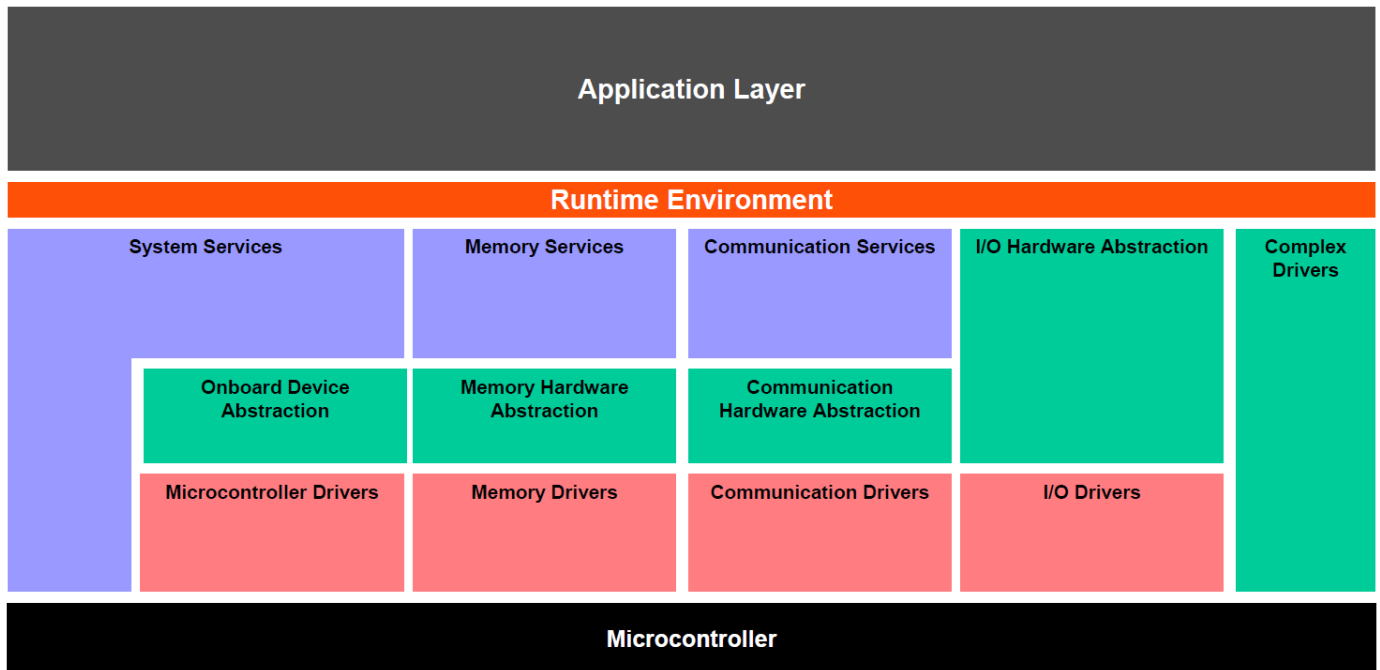
<i>Acronym:</i>	<i>Description:</i>
N_OK	Not OK
PossibleErrors	PossibleErrors means the ApplicationErrors as defined in meta model
Application Layer	The Application Layer is placed above the RTE. Within the Application Layer the AUTOSAR Software-Components are placed.

<i>Abbreviation:</i>	<i>Description:</i>
API	Application Programming Interface
AUTOSAR	AUTomotive Open System ARchitecture
BSW	Basic SoftWare
DET/Det	Development Error Tracer
DLT/Dlt	Diagnostic Log and Trace
ID/Id	Identifier
RAM	Random Access Memory
SRS	Software Requirements Specification
STS	System Test Specification
SWS	SoftWare Specification
SID	Service Id
SW-C	SoftWare Component
API	Application Programming Interface
AUTOSAR	AUTomotive Open System ARchitecture
BSW	Basic SoftWare
DET/Det	Development Error Tracer
DLT/Dlt	Diagnostic Log and Trace

### 4 AUTOSAR System

#### 4.1 Overview of Software Layers

AUTOSAR 플랫폼의 Layered Architecture 는 아래와 같다. AUTOSAR 플랫폼은, Service Layer, ECU Abstraction Layer, Complex Device Drivers 및 Microcontroller Abstraction Layer 로 구분될 수 있다.



## 4.2 AUTOSAR Diagnostic Stack

### 4.2.1 Function Inhibition Manager

Event Status (TestFailed 등 ) 에 따라 SW-C functionality 의 permission 상태가 변경된다.  
SW-C 에서 functionality 의 permission 의 상태를 모니터링하여 functionality 의 동작 유무를 결정한다.

### 4.2.2 Diagnostic Event Manager

SW-C 및 BSW 모듈에서 발생한 이벤트를 처리한다.

### 4.2.3 Diagnostic Communication Manager

Diagnostic data flow, diagnostic state 를 관리하며, 진단기의 진단 요청 수행한다.

### 4.2.4 Development Error Tracer

개발중 발생하는 에러를 관리한다.

## 5 Product Release Notes

### 5.1 Overview

이 Chapter 에서는, 현대오트론 Diagnostic Products 에 대한 release 관련 내용을 제공하는데 목적이 있으며, Diagnostic Stack Software product release version 에 대한, 제한사항 및 특이사항을 기술하고 있다.



설정 영향	없음
ASW 조치 사항	없음

➤ Version 1.0.5 (2017-05-30)

- 개선 사항

■ Compile warning 수정

원인	Compile warning 수정
동작 영향	없음
설정 영향	없음
ASW 조치 사항	없음

■ Error Hook 사용 설정 삭제

원인	Error Hook 사용 설정 삭제
동작 영향	없음
설정 영향	없음
ASW 조치 사항	없음

➤ Version 1.0.2 (2015-08-25)

- Module version check macro 수정(기능 변경 없음)

### 5.2.3 Limitations

- 1) Pre-Compile 만 지원한다.

### 5.2.4 Deviation

Autosar R4.4.0 Mcal 적용에 따른 Det\_ReportTransientFault, Det\_ReportRuntimeError 반영

## 6 Configuration Guide

- (1) 특별한 표기가 없을 경우 AUTOSAR 사양에 근거한 Parameter 이며  
HYUNDAI AUTRON 에서 추가한 Parameter 일 경우 (AUTRON specific) 을 표기하였다

- (2) Not supported 이면서 default 값이 있는 경우는 설정된 값이 변경되어서는 안된다.

### 6.1 General

None

## 6.2 DetGeneral

Parameter Name	Value	Category
DetRamBufferSize <sup>(1)</sup>		C
DetForwardToDlt	FALSE	F
DetVersionInfoApi	FALSE	F

(1) DetRamBufferSize :

This parameter specifies RAM buffer size

### 6.3 DetNotification

설정을 참고한다.

Parameter Name	Value	Category
DetErrorHook		C

## 6.4 System Configuration

### 6.4.1 ApplicationSwComponentType 설정

※ AUTOSAR BSW Service API Guide.doc 문서를 참조한다.

### 6.4.2 CompositionSwComponentType 설정

※ AUTOSAR BSW Service API Guide.doc 문서를 참조한다.



## 7 Application Programming Interface (API)

### 7.1 Type Definitions

No module specific types are required.

### 7.2 Interfaces

**Note:** ModuleId can be used in "port defined argument value".

#### 7.2.1 DETService

##### ReportError

<b>Function Name</b>	Xxx_ReportError	
<b>Syntax:</b>	FUNC(Std_ReturnType, DET_CODE) Xxx_ReportError( uint8 InstanceId, uint8 ApId, uint8 ErrorId)	
<b>Sync/Async</b>	Depending on implemented functionality: 1. Breakpoint set: no return 2. Internal error counting/logging in RAM: synchronous 3. External error logging via communication interface: asynchronous: Not supported	
<b>Reentrancy</b>	Reentrant	
<b>Parameters (In)</b>	ModuleId	Module ID of calling module.
	InstanceId	The identifier of the index based instance of a module, starting from 0, If the module is a single instance module it shall pass 0 as the InstanceId.
	ApId	ID of API service in which error is detected(defined in SWS of calling module)
	ErrorId	ID of detected development error(defined in SWS of calling module).
<b>Parameters (Inout)</b>	None	
<b>Parameters (Out)</b>	None	
<b>Return Value</b>	Std_ReturnType	returns always E_OK (is required for services)
<b>Description</b>	Service to report development errors.	
<b>Preconditions</b>	None	
<b>Configuration Dependency</b>	None	

#### 7.2.2 참고사항

##### In Communication with application SW-C

RTE 기반 생성된 함수의 프로토타입에 대한 사항은 AUTOSAR BSW Service API Guide.doc 문서 참조.

## 8 Generator

## 8.1 Generator Option

Option	Description
-H/-Help	To display help regarding usage of the tool.
-O/-Output	To generate the output files in the specified directory location.
-V/-Version	To display the copyright information and the tool version.
-L/-Log	To generate W"\$BswConfig::Lis_File_NameW" file.
-D/-DryRun	To execute in validation mode.
-I/-Info	To disable Information Messages.
-W/-Warn	To disable Warning Messages.
-DDT	To disable the generation of Date and Time Information in the Tool Generated Output Files.

## 8.2 Generator Error Message

This section helps to analyze the errors or warnings displayed during the execution of the tool. It ensures conformance of input file(s) with syntax and semantics.

The Generation Tool displays errors or warnings or information when the user has configured incorrect inputs. The format of Error/Warning/Information message is as shown below:

- **ERR/WRN/INF<mid><xxx>: < Error/Warning/Information Message>**  
Where,  
 <mid>: 015 – Det Module Id (15) for user configuration checks.  
           000 – for command line checks.  
 <xxx>: 001 – 999 – Message ID.
- **File Name :** Name of the file in which the error has occurred
- **Path :** Absolute path of the container in which the parameter is present

'File Name' and 'Path' are optional.

Below section provides the list of module specific error, warning and information messages.

### 8.2.1 Error Messages

**ERR015003: 'Component Name' Component is not present in the input file(s).**

This error occurs, if any of the component Det is (are) not present in any of the input ECU Configuration Description File(s).

**ERR015005: The parameter 'Parameter Name' in the container 'Container Name' should be configured.**

This error occurs, if any of the below mentioned mandatory parameters are not configured.

Container Name	Parameter Name
BSW-IMPLEMENTATION	AR-RELEASE-VERSION

Container Name	Parameter Name
	VENDOR-ID
	SW-VERSION
BSW-MODULE-DESCRIPTION	MODULE-ID
DetGeneral	DetVersionInfoApi

**ERR015006: The value configured for the parameter 'Parameter Name' in the container 'Container Name' should follow the pattern : <Pattern>.**

This error occurs, if the string parameters configured do not follow C syntax. The list of string type parameters is as follows:

Parameter Name	Container Name	Pattern	Example
AR-RELEASE-VERSION	BSW-IMPLEMENTATION	<4.[0-9]+.[0-9]+>	4.0.3
SW-VERSION			
DetErrorHook	DetNotification	[a-zA-Z][a-zA-Z0-9W_]*	ErrHk_Func1

### 8.2.2 Warning Messages

None

### 8.2.3 Information Messages

INF015015: AUTOSAR Release version <version> configured for the parameter 'AR-RELEASE-VERSION' in provided MDT file is not correct. AUTOSAR Release version should be one of the following: 4.0.3.

This information occurs, if the value of the element AR-RELEASE-VERSION present in the BSW Module Description template is configured other than 4.0.3.

## 9 Det Error

None

## 10 Appendix