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| Project name | | |
| R-Car U5x MCAL Development | | |

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Table of contents

[Chapter 0: Preface 4](#_Toc173276463)

[0.1 Manual conventions 4](#_Toc173276464)

[0.2 Related documents 4](#_Toc173276465)

[0.2.1 How to read this document 4](#_Toc173276466)

[0.3 Abbreviations & Acronyms 5](#_Toc173276467)

[Chapter 1 - Introduction 6](#_Toc173276468)

[1.1 Scope 6](#_Toc173276469)

[1.2 Generation Tool Overview 6](#_Toc173276470)

[Chapter 2 - Architecture 7](#_Toc173276471)

[2.1 Overview of MEMACC Generation Tool Architecture 7](#_Toc173276472)

[2.2 Dependencies To Other Modules 8](#_Toc173276473)

[Chapter 3 - Design 9](#_Toc173276474)

[3.1 Concept 9](#_Toc173276475)

[3.1.1 Main 10](#_Toc173276476)

[3.1.2 Parser 10](#_Toc173276477)

[3.1.3 Validate 10](#_Toc173276478)

[3.1.4 Intermediate 10](#_Toc173276479)

[3.1.5 Generation 10](#_Toc173276480)

[3.2 File structure 11](#_Toc173276481)

[Chapter 4 - Class 13](#_Toc173276482)

[4.1 MemAccCommon(U5x) 14](#_Toc173276483)

[4.1.1 Generation 14](#_Toc173276484)

[4.1.2 Intermediate 45](#_Toc173276485)

[4.1.3 MapName 72](#_Toc173276486)

[4.1.4 Utils 72](#_Toc173276487)

[4.1.5 Validation 75](#_Toc173276488)

[4.2 U5Lx 89](#_Toc173276489)

[4.2.1 Generation 89](#_Toc173276490)

[4.2.2 Intermediate 104](#_Toc173276491)

[4.2.3 MapName 108](#_Toc173276492)

[4.2.4 Validation 109](#_Toc173276493)

[Chapter 5 - Error, Warning and Information Messages 116](#_Toc173276494)

[Chapter 6 - Uncovered List 117](#_Toc173276495)

***List of Figures***

[Figure 1 : MEMACC Generation Tool Hierarchical Architecture 7](#_Toc173276496)

[Figure 2 : Concept of MEMACC Generation Tool 9](#_Toc173276497)

[Figure 1. Overview of class diagram 13](#_Toc173276498)

[Figure 4 : Diagrams of MemAccCommon\_Generation 14](#_Toc173276499)

[Figure 5: Common::Intermediate 45](#_Toc173276500)

[Figure 6: Common::MapName 72](#_Toc173276501)

[Figure 7: Common::Utils 72](#_Toc173276502)

[Figure 8: Common::Validation 75](#_Toc173276503)

[Figure 13: U5Lx::Generation 89](#_Toc173276504)

[Figure 14: U5Lx::Intermediate 104](#_Toc173276505)

[Figure 15: U5Lx::MapName 108](#_Toc173276506)

[Figure 16: U5Lx::Validation 109](#_Toc173276507)

# Chapter 0: Preface

## Manual conventions

1. Grey highlighted text marks topics, which need to be discussed, hence are not fixed until Grey highlighting is removed. (E.g.: Bus speed of 1 Mbit/s @ φCAN = 8 MHz)
2. Gold shaded text marks topics, which cannot be opened to customer. (E.g. CGMCONF register)

## Related documents

| **Sl. No.** | **Title/File name** | **Revision** |
| --- | --- | --- |
| [1] | R-Car/U5x MCAL MEMACC Generation Tool Error List  R-Car\_U5x \_MEMACC\_GenTool\_ErrorList.xlsx | 1.00 |
| [2] | R-Car/U5x MCAL Generic Software Detail Design Specification for Generation Tool  R-Car\_U5x\_Generic\_Gentool\_UD.docx | 1.00 |
| [3] | R-Car/U5x MCAL MEMACC Configuration Design Document R-Car\_U5x\_MEMACC\_Configuration.xlsx | 1.00 |

### How to read this document

| **Chapter** | **Contents** |
| --- | --- |
| Chapter 1 (Introduction) | This Chapter contains the Scope of the document and Generation Tool overview. |
| Chapter 2 (Architecture) | This Chapter contains overview of MEMACC Generation Tool architecture and dependency to other modules. |
| Chapter 3 (Design) | This Chapter contains Concept, File Structure for MEMACC Generation Tool. |
| Section 4 (Class) | This section contains Class, Data types, Activity and Function Flow for MEMACC Generation Tool. |
| Section 5 (Error, Warning and Information Messages) | This section provides Error, Warning and Information Messages. |
| Section 6 (Uncovered List) | This section provides list of higher level design Id which not covered. |

## Abbreviations & Acronyms

| **Abbreviations/Acronym** | **Description** |
| --- | --- |
| API | Application Programming Interface |
| AUTOSAR | AUTomotive Open System ARchitecture |
| BSWMDT | Basic Software Module Description Template |
| CFD | Control Flow Diagram |
| CFGXML | Configuration XML File |
| DEM | Diagnostic Event Manager |
| DFD | Data Flow Diagram |
| ECU | Electronic Control Unit |
| Id | Identifier |
| IMR | Interrupt Mask Register |
| MHz | Mega Hertz |
| MCU | MicroController Unit |
| SW | SoftWare |
| TRXML | Translation XML File |
| XML | eXtensible Markup Language |
| MEMACC | Memory Access |
| T.B.D | To Be Defined |

| **Definitions** | **Description** |
| --- | --- |
| e.g. | Example |
| Sl. No. | Serial Number |

# Introduction

## Scope

This document provides generation Tool design for development of R23.11 AUTOSAR MEMACC Driver for Renesas U5x. It also provides used, un-used parameters/container list, error, warning and information messages that are specific to AUTOSAR R23.11 Renesas U5x MEMACC Driver.

## Generation Tool Overview

MEMACC Driver generation Tool is a command line tool that will parse the ECU Configuration Description File(s), BSWMDT File, TRXML file and CFGXML file and generate the MEMACC Driver C Source and Header files.

ECU Configuration Description File(s) for MEMACC Driver contains information about MEMACC General Configuration and Configuration of individual MEMACC configuration.

The Generation Tool will generate MemAcc\_Cfg.h, MemAcc\_Cbk.h and MemAcc\_PBcfg.c files.

# Architecture

## Overview of MEMACC Generation Tool Architecture

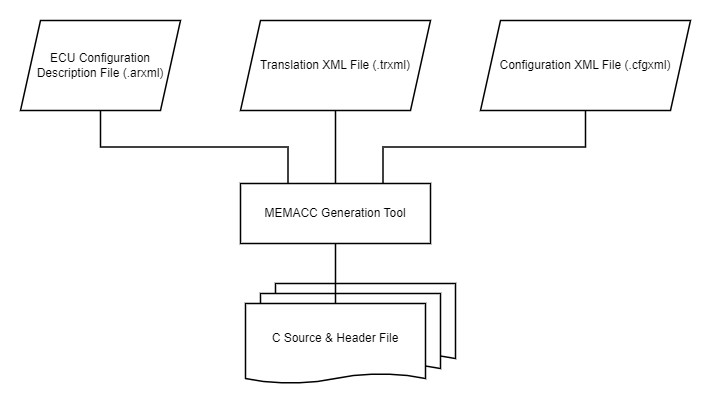


Figure 1 : MEMACC Generation Tool Hierarchical Architecture

MEMACC Driver Generation Tool will accept ECU Configuration Description File (.arxml), BSWMDT File, Translation XML File (.trxml) and Configuration XML File (.cfgxml) as input and generates MEMACC Driver specific C Source and Header Files as output.

* ECU Configuration Description File (.arxml):

This file will contain MEMACC Driver specific configuration information. This file should be generated by AUTOSAR specified Configuration Editor.

* BSWMDT File:

MEMACC Driver Generation Tool uses “Common Published Information” from MEMACC module specific BSWMDT File. MEMACC Driver specific BSWMDT File should not be updated manually since it is “Static Configuration” file.

* Translation XML File (.trxml):

This file will contain the path of translation header file and device header file for particular device (microcontroller). Translation header file will contain the mapping of register names while device header file will contain register names and associated address. Based upon the configuration in ECU Configuration Description File (.arxml) and by using Translation XML, MEMACC Generation Tool fetches the addresses from device header file via translation header file.

* Configuration XML File (.cfgxml):

This file will contain the setting of command line options. This file should be located in the same location where MEMACC Generation Tool is present. This file is optional file and MEMACC Generation Tool will use this file only if command line argument contains only MEMACC Generation Tool.

## Dependencies To Other Modules

In the case of MEMACC Driver configuration, there is other AUTOSAR module configuration dependency.

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No.** | **Module** | **Required Container** | **Required Parameter** |
| 1 | DET | - | - |
| 2 | MCU | - | - |

# Design

## Concept

Concept of execution for MEMACC Driver Generation Tool is as follows:



**Figure 2 : Concept of MEMACC Generation Tool**

**Note:** In the above figure, dotted lines represent data flow and solid lines represent control flow.

The “Main” function is the entry point for the program. This inits processing of the command line options, input files and generation of output files.

The “Validate” function will validate the configuration (contents of ECU Configuration Description File(s) as input). If there are incorrect values or incorrect dependencies, the tool will display error, warning and information messages. In case of errors, the tool will abort the execution.

The “Intermediate” function will generate intermediate data structures as per the output file templates, which will be used in generating the Generation Tool C Source and C Header Files.

The “Output” function will generate Generation Tool output files. Output files will be created using intermediate data structures generated during “Intermediate” function. C Source files will be generated in “src” directory and C Header files in “include” directory. This function contains the following sub functions: “Output Files” and “Output File Template”. “Output Files” function calls “Generate Output Data Structures” recursively to generate output data structures to be generated in the C Source and C Header files. “Output File Template” function will contain the C Source and C Header file templates.

### Main

The detail of Main is described at [2]. Please refer this document.

### Parser

|  |  |
| --- | --- |
| Location | Will be in generic part |
| Input | All input files will be parsed into this function and processed into C# readable structure. |
| Output | This function will parse XML input file into each structure and process the file to data structure. The structure will then be validated and the configured into output function. |

### Validate

|  |  |
| --- | --- |
| Location | The “Validation” folders as following  1. Common validation methods for all micro sub variants  MemAcc<MICRO\_VARIANT>/Common/Validation  2. Specific validation methods for sub variants  MemAcc <MICRO\_VARIANT>/<MICRO\_SUB\_VARIANT>/Validation |
| Input | The configuration information will be input to this function. |
| Output | This function will validate the user configuration. It will display error, warning and information messages, if any exceptions found in the user configuration. If error messages are displayed, Generation Tool execution be aborted. If warnings or information are displayed without errors, Generation Tool continue the execution. |

### Intermediate

|  |  |
| --- | --- |
| Location | The “Intermediate” folders as following  1. Common validation methods for all micro sub variants  MemAcc<MICRO\_VARIANT>/Common/Intermediate  2. Specific validation methods for sub variants  MemAcc<MICRO\_VARIANT>/<MICRO\_SUB\_VARIANT>/Intermediate |
| Input | The configuration information be input to this function. |
| Output | This function creates intermediate data structures, which contain information required to generate Generation Tool output files. |

### Generation

|  |  |
| --- | --- |
| Location | The “Generation” folders as following  1. Common validation methods for all micro sub variants  MemAcc <MICRO\_VARIANT>/Common/Generation  2. Specific validation methods for sub variants  MemAcc <MICRO\_VARIANT>/Generation |
| Input | Intermediate data structures generated in “Intermediate” function will be used as input in this function. |
| Output | This function generates C Source and Header files.  MemAcc\_Cfg.h file contains pre-compile time parameters and handles.  MemAcc\_Cbk.h file contains call-back functions prototype declarations.  MemAcc\_PBcfg.c file contains post build time parameters. |

## File structure

**MEMACC\_TUD\_FST\_001:**

Dev: U5L1, U5L2, U5L4  
*[Attr: U5L1, U5L2, U5L4]*

The file organization for MEMACC Generation Tool code will be done as shown below:

|  |
| --- |
| **MemAccU5x.sln** |
| +---MemAccCommon |
| | +---Generation |
| | | MemAccU5xCfgFileGeneration.cs |
| | | MemAccU5xCbkFileGeneration.cs |
| | | MemAccU5xPbCfgFileGeneration.cs |
| | +---Intermediate |
| | | MemAccU5xIntermediate.cs |
| | +---MapName |
| | | MemAccMap.cs |
| | +---Util |
| | | MemAccU5xUtil.cs |
| | +---Validation |
| | MemAccU5xValidation.cs |
| +---MemAccU5x |
| | +---Common |
| | | +---Generation |
| | | | MemAcc<MICRO\_VARIANT>CbkFileGeneration.cs |
| | | | MemAcc<MICRO\_VARIANT>CfgFileGeneration.cs |
| | | | MemAcc<MICRO\_VARIANT>PbCfgFileGeneration.cs |
| | | +---Intermediate |
| | | | MemAcc<MICRO\_VARIANT>Intermediate.cs |
| | | +---Validation |
| | | | MemAcc<MICRO\_VARIANT>Validation.cs |
| | | +---MapName |
| | | | MemAccMap.cs |
| | +---<MICRO\_SUB\_VARIANT> |
| | | | +---Generation |
| | | | | MemAcc<MICRO\_SUB\_VARIANT>CbkFileGeneration.cs |
| | | | | MemAcc<MICRO\_SUB\_VARIANT>CfgFileGeneration.cs |
| | | | | MemAcc<MICRO\_SUB\_VARIANT>PbCfgFileGeneration.cs |
| | | | +---Intermediate |
| | | | | MemAcc<MICRO\_SUB\_VARIANT>Intermediate.cs |
| | | | +---Validation |
| | | | | MemAcc<MICRO\_SUB\_VARIANT>Validation.cs |

*{Ref: N/A}*

**Note:**

< MICRO\_VARIANT >: U5Lx ; < MICRO\_SUB\_VARIANT >: U5L4, U5L2, U5L1

# Class

This section contains class diagram and list of the function for MemAcc Generation Tool.

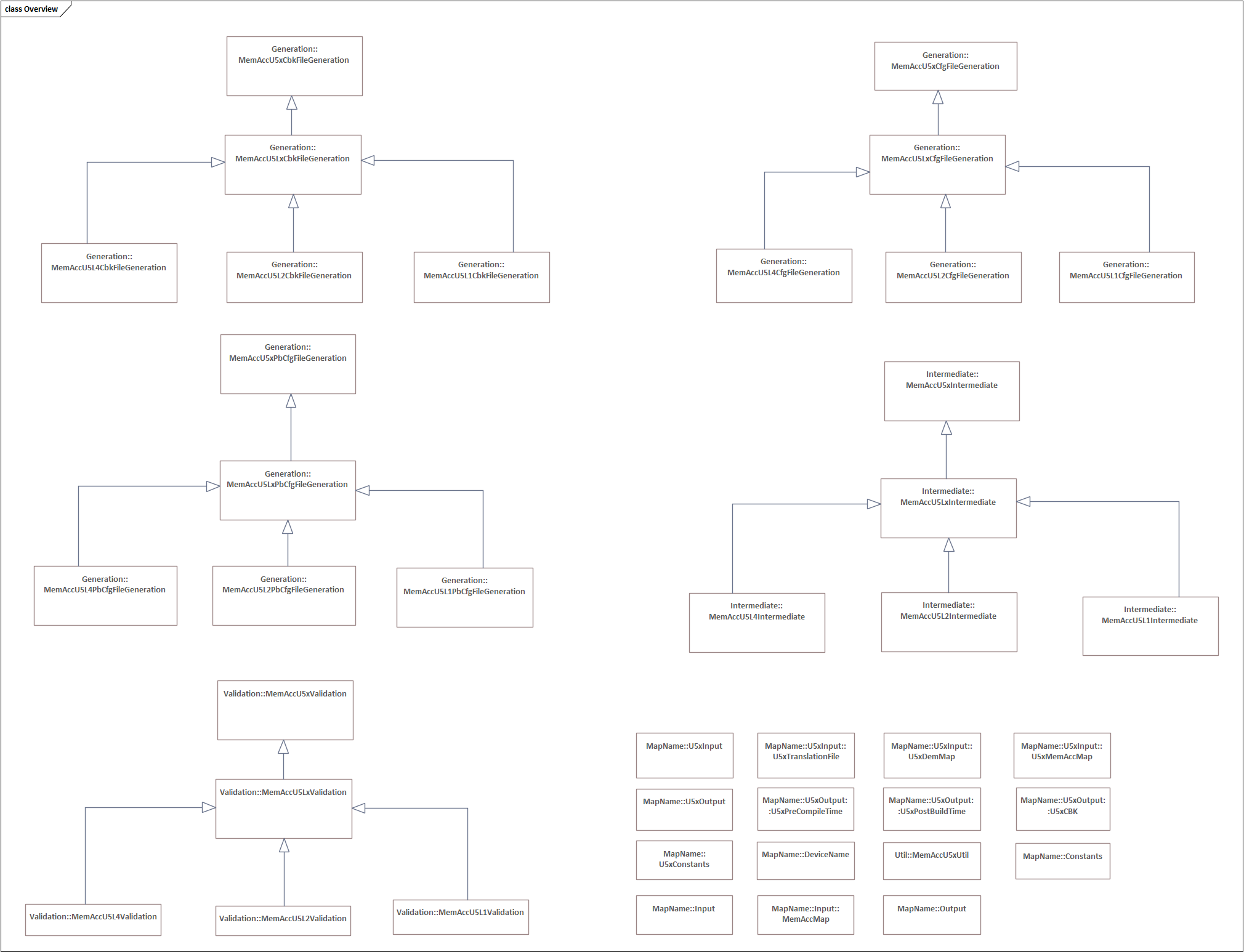


Figure 1. Overview of class diagram

Note: All methods with type “Protected” are represented by “protected virtual” in source code and can be overrided by subclasses.

## MemAccCommon(U5x)

### Generation

#### UML

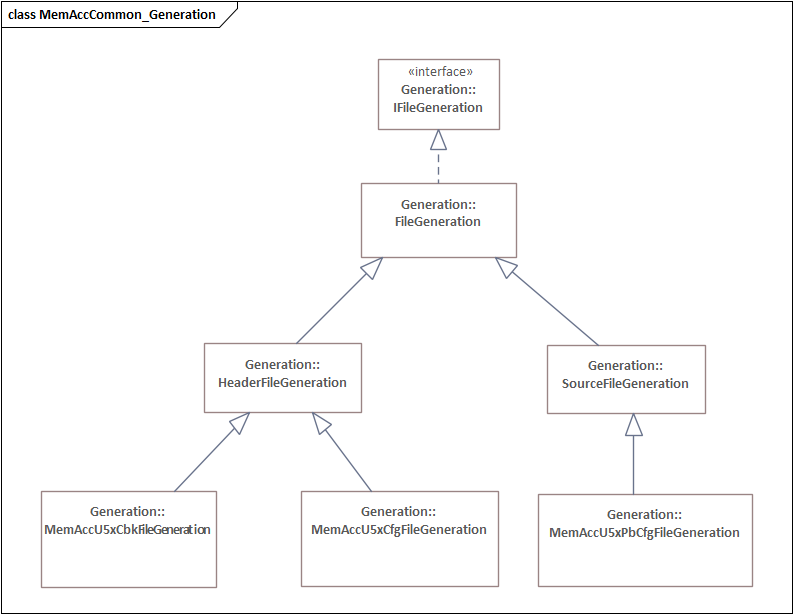


Figure 4 : Diagrams of MemAccCommon\_Generation

* MemAccU5xCfgFileGeneration and MemAccU5xCbkFileGeneration classes receive API to generate information from HeaderFileGeneration (\*.h file) …
* MemAccU5xPbCfgFileGeneration classes receive API to generate information from SourceFileGeneration (\*.c file).
* SourceFileGeneration to define output file (.c) and HeaderFileGeneration to define output file (.h)
* Common information will be stored on parent class as FileGeneration, objective is re-use information both Header and Source file. In addition, this class define steps to process output file.
* Section class handle section template in Header or Source files, section group generated parameters such as Global Data Types, Global Data, Function Definitions, Version Information, Common Published Information, …

#### Renesas::Generator::MemAccCommon::Generation::MemAccU5xCbkFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5xCbkFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cbk.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | MemAccU5xCbkFileGeneration | Protected | This is a default constructor for U5x MemAccU5xCbkFileGeneration |
| (2) | MemAccU5xCbkFileGeneration | Protected | This is a constructor for U5x MemAccU5xCbkFileGeneration |
| (3) | GenMemAccVersionInfo | Protected | To generate version info |
| (4) | GenStartCommand | Protected | To generate Start |
| (5) | GenStopCommand | Protected | To generate StopComment |
| (6) | GenJobEndNotification | Protected | To generate JobEndNotification |
| (7) | GenerateCodingRuleViolations | Protected | To generate Coding Rule Violations section |

##### Fields

##### Methods

###### MemAccU5xCbkFileGeneration

MEMACC\_TUD\_CLS\_001\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |
| --- | --- |
| **Method Name** | MemAccU5xCbkFileGeneration |
| **Arguments** | None |
| **Return** | None |
| **Generated Value** | None |
| **Description** | This is a default constructor for U5x MemAccU5xCbkFileGeneration  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None |

{Ref: N/A}

###### MemAccU5xCbkFileGeneration

MEMACC\_TUD\_CLS\_001\_002:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | MemAccU5xCbkFileGeneration | | |
| **Arguments** | string fileName | Input | |
| Range: | String |
| string outputFolder | Input | |
| Range: | N/A |
| ILogger logger | Input | |
| Range: | Interface ILogger |
| IBasicConfiguration basicConfiguration | Input | |
| Range: | Interface IBasicConfiguration |
| IRuntimeConfiguration runtimeConfiguration | Input | |
| Range: | Interface IRuntimeConfiguration |
| IIntermediateData intermediateData | Input | |
| Range: | Interface IIntermediateData |
| **Return** | None | | |
| **Generated Value** | None | | |
| **Description** | This is a constructor for U5x MemAccU5xCbkFileGeneration  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### GenMemAccVersionInfo

MEMACC\_TUD\_CLS\_001\_003:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccVersionInfo | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: VERSION\_INFO  Desc: Version Information | None | |
| Range: | 4U, 9U, 0U, 1U, 0U |
| **Generated Value** | MEMACC\_CBK\_AR\_RELEASE\_MAJOR\_VERSION MEMACC\_CBK\_AR\_RELEASE\_MINOR\_VERSION MEMACC\_CBK\_AR\_RELEASE\_REVISION\_VERSION MEMACC\_CBK\_SW\_MAJOR\_VERSION MEMACC\_CBK\_SW\_MINOR\_VERSION | | |
| **Description** | To generate version info  Algorithm: GLOBAL VARIABLE IN:  List of ret of BaseGenerationItem. RANGE: array of BaseGenerationItem  GLOBAL VARIABLE OUT:  None  PRECONDITION:  (1) List of ret of BaseGenerationItem: never null or empty   LET param =new Dictionary<string,string>()   $"moduleName\_59\_RENESAS\_Constant.CBK\_AR\_RELEASE\_MAJOR\_VERSION",  Resources.CBK\_AR\_RELEASE\_MAJOR\_VERSION\_PRE\_COMMENT  ,  $"moduleName\_59\_RENESAS\_Constant.CBK\_AR\_RELEASE\_MINOR\_VERSION", String.Empty  ,  $"moduleName\_59\_RENESAS\_Constant.CBK\_AR\_RELEASE\_REVISION\_VERSION", String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.CBK\_SW\_MAJOR\_VERSION",  Resources.CBK\_SW\_MAJOR\_VERSION\_PRE\_COMMENT ,  $"moduleName\_59\_RENESAS\_Constant.CBK\_SW\_MINOR\_VERSION", String.Empty ,  ;  FOREACH item in root.Childs.Where(x => param.Keys.Contains(x.Name))  CALL items.Add WITH CALL MemAccU2xUtil.CreateBasicParam  WITH $"item.Name", param(item.Name), String.Empty, item.Value  RETURN items.ToArray() | | |

{Ref: [3] MEMACC\_DAD\_CFG\_012\_001, MEMACC\_DAD\_CFG\_012\_002, MEMACC\_DAD\_CFG\_012\_003, MEMACC\_DAD\_CFG\_012\_004, MEMACC\_DAD\_CFG\_012\_005}

###### GenStartCommand

MEMACC\_TUD\_CLS\_001\_004:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenStartCommand | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Name: result  Section: FUNCTION\_PROTOTYPE  Desc: Function Prototypes | None | |
| Range: | #define MEMACC\_START\_SEC\_APPL\_CODE #include "MemAcc\_MemMap.h" |
| **Generated Value** | #define MEMACC\_START\_SEC\_APPL\_CODE #include "MemAcc\_MemMap.h" | | |
| **Description** | To generate Start  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET result = CALL BaseGenerationItem WITH  CALL DefineGenerationItem WITH string.Empty,  string.Empty, Output.CBK.MEMACC\_START\_SEC\_APPL\_CODE,  string.Empty, hasNameInstanceSetting: false,  CALL StringGenerationItem WITH Resources.INCLUDE\_MEMMAP  RETURN result | | |

{Ref: N/A}

###### GenStopCommand

MEMACC\_TUD\_CLS\_001\_005:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenStopCommand | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Name: result  Section: FUNCTION\_PROTOTYPE  Desc: End of File | None | |
| Range: | #define MEMACC\_STOP\_SEC\_APPL\_CODE #include "MemAcc\_MemMap.h" |
| **Generated Value** | #define MEMACC\_STOP\_SEC\_APPL\_CODE #include "MemAcc\_MemMap.h" | | |
| **Description** | To generate StopComment  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET result = CALL BaseGenerationItem WITH  CALL DefineGenerationItem WITH string.Empty,  string.Empty, Output.CBK.MEMACC\_STOP\_SEC\_APPL\_CODE,  string.Empty, hasNameInstanceSetting: false,  CALL StringGenerationItem WITH Resources.INCLUDE\_MEMMAP  RETURN result | | |

{Ref: N/A}

###### GenJobEndNotification

MEMACC\_TUD\_CLS\_001\_006:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenJobEndNotification | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: FUNCTION\_PROTOTYPE  Desc: Call back function name of MemAccJobEndNotification | None | |
| Range: | (extern FUNC(void, MemAcc\_APPL\_CODE) MemAccJobEndNotification(void) OR null) |
| **Generated Value** | MemAccJobEndNotification Note: The API name will be configured by the user. | | |
| **Description** | To generate JobEndNotification  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  RETURN CALL StringGenerationItem WITH  CALL IntermediateData.GetStringDataByPath WITH "/MemAccJobEndNotification" | | |

{Ref: [3] MEMACC\_DAD\_CFG\_012\_006}

###### GenerateCodingRuleViolations

MEMACC\_TUD\_CLS\_001\_007:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenerateCodingRuleViolations | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: CodingRuleCbk  Desc: Coding Rule Violations | None | |
| Range: | A string that describe Coding Rule Violations |
| **Generated Value** | A string that describe Coding Rule Violations | | |
| **Description** | To generate Coding Rule Violations section  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  RETURN CALL StringGenerationItem WITH Resources.CodingRule | | |

{Ref: N/A}

#### Renesas::Generator::MemAccCommon::Generation::MemAccU5xCfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5xCfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cfg.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | MemAccU5xCfgFileGeneration | Protected | This is a default constructor for U5x |
| (2) | MemAccU5xCfgFileGeneration | Protected | This is a constructor for U5x |
| (3) | GenMemAccVersionInfo | Protected | To generate version info |
| (4) | GenAutosarVersion | Protected | Generate Autosar Version macro |
| (5) | GenMemAccCommonPublishedInfo | Protected | To generate common published info |
| (6) | GenInclude | Protected | To generate #include |
| (7) | GenerateCodingRuleViolations | Protected | To generate Coding Rule Violations section |
| (8) | GenMemAccInstanceIDValue | Protected | To generate MEMACC\_INSTANCE\_ID\_VALUE |
| (9) | GenMemAccParamsOnOff | Protected | To generate for parameters are STD\_ON or STD\_OFF |
| (10) | GenMemAccMaxAddressAreaID | Protected | To generate MEMACC\_MAX\_ADDRESS\_AREA\_ID |
| (11) | GenMemAccHighestPriority | Protected | To generate MEMACC\_HIGHEST\_PRIORITY |
| (12) | GenMemAccNumofMemInstance | Protected | To generate MEMACC\_NUMBER\_OF\_MEM\_INSTANCE |
| (13) | GenMemAccCompareBufferWordSize | Protected | To generate MEMACC\_COMPARE\_BUFFER\_WORD\_SIZE |
| (14) | GenMemAccConfigSet | Protected | To generate a list of params of MemAcc\_Config |
| (15) | genListOfParams | Private | This function is invoked by other function to generate list of param |

##### Fields

##### Methods

###### MemAccU5xCfgFileGeneration

MEMACC\_TUD\_CLS\_002\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |
| --- | --- |
| **Method Name** | MemAccU5xCfgFileGeneration |
| **Arguments** | None |
| **Return** | None |
| **Generated Value** | None |
| **Description** | This is a default constructor for U5x  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None |

{Ref: N/A}

###### MemAccU5xCfgFileGeneration

MEMACC\_TUD\_CLS\_002\_002:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | MemAccU5xCfgFileGeneration | | |
| **Arguments** | string fileName | Input | |
| Range: | String |
| string outputFolder | Input | |
| Range: | N/A |
| ILogger logger | Input | |
| Range: | Interface ILogger |
| IBasicConfiguration basicConfiguration | Input | |
| Range: | Interface IBasicConfiguration |
| IRuntimeConfiguration runtimeConfiguration | Input | |
| Range: | Interface IRuntimeConfiguration |
| IIntermediateData intermediateData | Input | |
| Range: | Interface IIntermediateData |
| **Return** | None | | |
| **Generated Value** | None | | |
| **Description** | This is a constructor for U5x  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### GenMemAccVersionInfo

MEMACC\_TUD\_CLS\_002\_003:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccVersionInfo | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: VERSION\_INFO  Desc: Version Information | None | |
| Range: | (4U, 9U, 0U, 1U, 0U) |
| **Generated Value** | MEMACC\_CFG\_AR\_RELEASE\_MAJOR\_VERSION MEMACC\_CFG\_AR\_RELEASE\_MINOR\_VERSION MEMACC\_CFG\_AR\_RELEASE\_REVISION\_VERSION MEMACC\_CFG\_SW\_MAJOR\_VERSION MEMACC\_CFG\_SW\_MINOR\_VERSION | | |
| **Description** | To generate version info  Algorithm: GLOBAL VARIABLE IN:  List of ret of BaseGenerationItem. RANGE: array of BaseGenerationItem  GLOBAL VARIABLE OUT:  None  PRECONDITION:  (1) List of ret of BaseGenerationItem: never null or empty   LET param =new Dictionary(string,string)   $"moduleName\_59\_RENESAS\_Constant.CFG\_AR\_RELEASE\_MAJOR\_VERSION",  Resources.CFG\_AR\_RELEASE\_MAJOR\_VERSION\_PRE\_COMMENT  ,  $"moduleName\_59\_RENESAS\_Constant.CFG\_AR\_RELEASE\_MINOR\_VERSION", String.Empty  ,  $"moduleName\_59\_RENESAS\_Constant.CFG\_AR\_RELEASE\_REVISION\_VERSION", String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.CFG\_SW\_MAJOR\_VERSION",  Resources.CFG\_SW\_MAJOR\_VERSION\_PRE\_COMMENT ,  $"moduleName\_59\_RENESAS\_Constant.CFG\_SW\_MINOR\_VERSION", String.Empty ,  ;  FOREACH item in root.Childs.Where(x => param.Keys.Contains(x.Name))  CALL items.Add WITH CALL MemAccU5xUtil.CreateBasicParam  WITH $"item.Name", param(item.Name), String.Empty, item.Value  RETURN items.ToArray() | | |

{Ref: [3] MEMACC\_DAD\_CFG\_001\_001, MEMACC\_DAD\_CFG\_001\_002, MEMACC\_DAD\_CFG\_001\_003, MEMACC\_DAD\_CFG\_001\_004, MEMACC\_DAD\_CFG\_001\_005}

###### GenAutosarVersion

MEMACC\_TUD\_CLS\_002\_004:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenAutosarVersion | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Name: arVersion  Desc: BaseIntermediateItem | None | |
| Range: | MEMACC\_AR\_490\_VERSION |
| **Generated Value** | None | | |
| **Description** | Generate Autosar Version macro  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None   [To generate MEMACC\_AR\_VERSION  Algorithm:  LET arVersion = GetItemByPath('MEMACC\_AR\_VERSION')  LET name = arVersion.Name  LET value = arVersion.Value  Return BaseGenerationItem(name, value) | | |

{Ref: [3] MEMACC\_DAD\_CFG\_001\_014}

###### GenMemAccCommonPublishedInfo

MEMACC\_TUD\_CLS\_002\_005:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccCommonPublishedInfo | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: COMMON\_PUBLISHED\_INFO  Desc: Common Published Information | None | |
| Range: | (4U, 9U, 0U, 1U, 0U, 0U, 59U, 041U) |
| **Generated Value** | MEMACC\_AR\_RELEASE\_MAJOR\_VERSION\_VALUE MEMACC\_AR\_RELEASE\_MINOR\_VERSION\_VALUE MEMACC\_AR\_RELEASE\_REVISION\_VERSION\_VALUE MEMACC\_SW\_MAJOR\_VERSION\_VALUE MEMACC\_SW\_MINOR\_VERSION\_VALUE MEMACC\_SW\_PATCH\_VERSION\_VALUE MEMACC\_VENDOR\_ID\_VALUE MEMACC\_MODULE\_ID\_VALUE | | |
| **Description** | To generate common published info  Algorithm: GLOBAL VARIABLE IN:  List of ret of BaseGenerationItem. RANGE: array of BaseGenerationItem   GLOBAL VARIABLE OUT:  ret   PRECONDITION:  (1) List of items of BaseGenerationItem: null or empty   LET param =new Dictionary(string,string)   $"moduleName\_59\_RENESAS\_Constant.CFG\_AR\_RELEASE\_MAJOR\_VERSION", String.Empty  ,  $"moduleName\_59\_RENESAS\_Constant.CFG\_AR\_RELEASE\_MINOR\_VERSION", String.Empty  ,  $"moduleName\_59\_RENESAS\_Constant.CFG\_AR\_RELEASE\_REVISION\_VERSION", String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.SW\_MAJOR\_VERSION\_VALUE, String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.SW\_MINOR\_VERSION\_VALUE, String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.SW\_PATCH\_VERSION\_VALUE, String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.VENDOR\_ID\_VALUE", String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.MODULE\_ID\_VALUE", String.Empty ,  ;  CALL items.Add CALL MemAccU5xUtil.CreateBasicParam  WITH String.Empty, param[item.Name], String.Empty, item.Value  FOREACH item in root.Childs.Where(x => param.Keys.Contains(x.Name))  CALL items.Add WITH CALL MemAccU5xUtil.CreateBasicParam  WITH $"item.Name", param[item.Name], String.Empty, item.Value  RETURN items.ToArray() | | |

{Ref: [3] MEMACC\_DAD\_CFG\_001\_006, MEMACC\_DAD\_CFG\_001\_007, MEMACC\_DAD\_CFG\_001\_008, MEMACC\_DAD\_CFG\_001\_009, MEMACC\_DAD\_CFG\_001\_010, MEMACC\_DAD\_CFG\_001\_011, MEMACC\_DAD\_CFG\_001\_012, MEMACC\_DAD\_CFG\_001\_013}

###### GenInclude

MEMACC\_TUD\_CLS\_002\_006:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenInclude | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Desc: Include Section | None | |
| Range: | "MemIf\_Types.h" |
| **Generated Value** | "MemIf\_Types.h" | | |
| **Description** | To generate #include  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  RETURN CALL StringGenerationItem WITH  Resources.MEM\_IF\_TYPES | | |

{Ref: N/A}

###### GenerateCodingRuleViolations

MEMACC\_TUD\_CLS\_002\_007:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenerateCodingRuleViolations | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: CodingRuleCfg  Desc: Coding Rule Violations | None | |
| Range: | A string that describe Coding Rule Violations |
| **Generated Value** | A string that describe Coding Rule Violations | | |
| **Description** | To generate Coding Rule Violations section  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  RETURN CALL StringGenerationItem WITH Resources.Cfg\_QAC | | |

{Ref: N/A}

###### GenMemAccInstanceIDValue

MEMACC\_TUD\_CLS\_002\_008:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccInstanceIDValue | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: Global Symbols  Desc: Instance ID of the MemAcc | None | |
| Range: | 0 |
| **Generated Value** | MEMACC\_INSTANCE\_ID\_VALUE | | |
| **Description** | To generate MEMACC\_INSTANCE\_ID\_VALUE  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  RETURN CALL MemAccU5xUtils.CreateBasicParam WITH  Output.U5xPreCompileTime.MEMACC\_INSTANCE\_ID\_VALUE,  Resources.INSTANCE\_ID\_VALUE\_PRE\_COMMENT | | |

{Ref: [3] MEMACC\_DAD\_CFG\_002\_001}

###### GenMemAccParamsOnOff

MEMACC\_TUD\_CLS\_002\_009:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccParamsOnOff | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: Global Symbols  Desc: generate for parameters are STD\_ON or STD\_OFF | None | |
| Range: | STD\_ON/STD\_OFF |
| **Generated Value** | MEMACC\_ALREADY\_INIT\_DET\_CHECK, MEMACC\_VERSION\_CHECK\_EXT\_MODULES, MEMACC\_DEV\_ERROR\_DETECT MEMACC\_CRITICAL\_SECTION\_PROTECTION MEMACC\_64BIT\_SUPPORT, MEMACC\_COMPARE\_API, MEMACC\_USE\_MEM\_FUNC\_PTR\_TABLE | | |
| **Description** | To generate for parameters are STD\_ON or STD\_OFF  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET = paramsList WITH Constant.ON\_OFF\_PARAMS  FOREACH macro IN paramsList.Childs  LET preComment = CALL Resources.ResourceManager.GetString WITH  $"{macro.Name}\_PRE\_COMMENT"  CALL result.Add WITH CALL MemAccU5xUtils.CreateBasicParam WITH  macro.Name, preComment, value: macro.Value  CALL result.Add WITH BreakLineGenerationItem  RETURN result.ToArray() | | |

{Ref: [3] MEMACC\_DAD\_CFG\_003\_002, MEMACC\_DAD\_CFG\_003\_003, MEMACC\_DAD\_CFG\_003\_004, MEMACC\_DAD\_CFG\_003\_005, MEMACC\_DAD\_CFG\_003\_006, MEMACC\_DAD\_CFG\_003\_007, MEMACC\_DAD\_CFG\_003\_008, MEMACC\_DAD\_CFG\_003\_009, MEMACC\_DAD\_CFG\_003\_010}

###### GenMemAccMaxAddressAreaID

MEMACC\_TUD\_CLS\_002\_010:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccMaxAddressAreaID | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: Global Symbols  Desc: maximum address area ID of the MemAcc | None | |
| Range: | 2 |
| **Generated Value** | MEMACC\_MAX\_ADDRESS\_AREA\_ID | | |
| **Description** | To generate MEMACC\_MAX\_ADDRESS\_AREA\_ID  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  RETURN CALL MemAccU5xUtils.CreateBasicParam WITH  Output.U5xPreCompileTime.MEMACC\_MAX\_ADDRESS\_AREA\_ID,  Resources.MEMACC\_MAX\_ADDRESS\_AREA\_ID\_PRE\_COMMENT | | |

{Ref: [3] MEMACC\_DAD\_CFG\_005\_001}

###### GenMemAccHighestPriority

MEMACC\_TUD\_CLS\_002\_011:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccHighestPriority | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: Global Symbols  Desc: maximum priority of the MemAcc | None | |
| Range: | 2 |
| **Generated Value** | MEMACC\_HIGHEST\_PRIORITY | | |
| **Description** | To generate MEMACC\_HIGHEST\_PRIORITY  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  RETURN CALL MemAccU5xUtils.CreateBasicParam WITH  Output.U5xPreCompileTime.MEMACC\_HIGHEST\_PRIORITY,  Resources.MEMACC\_HIGHEST\_PRIORITY\_PRE\_COMMENT | | |

{Ref: [3] MEMACC\_DAD\_CFG\_005\_002}

###### GenMemAccNumofMemInstance

MEMACC\_TUD\_CLS\_002\_012:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccNumofMemInstance | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: Global Symbols  Desc: number of instance of memacc | None | |
| Range: | 2 |
| **Generated Value** | MEMACC\_NUM\_OF\_MEM\_INSTANCE | | |
| **Description** | To generate MEMACC\_NUMBER\_OF\_MEM\_INSTANCE  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  RETURN CALL MemAccU5xUtils.CreateBasicParam WITH  Output.U5xPreCompileTime.MEMACC\_NUMBER\_OF\_MEM\_INSTANCE,  Resources.MEMACC\_NUMBER\_OF\_MEM\_INSTANCE\_PRE\_COMMENT | | |

{Ref: [3] MEMACC\_DAD\_CFG\_005\_004}

###### GenMemAccCompareBufferWordSize

MEMACC\_TUD\_CLS\_002\_013:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccCompareBufferWordSize | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: Global Symbols  Desc: size of compare buffer word | None | |
| Range: | 128 |
| **Generated Value** | MEMACC\_COMPARE\_BUFFER\_WORD\_SIZE | | |
| **Description** | To generate MEMACC\_COMPARE\_BUFFER\_WORD\_SIZE  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  RETURN CALL MemAccU5xUtils.CreateBasicParam WITH  Output.U5xPreCompileTime.MEMACC\_COMPARE\_BUFFER\_WORD\_SIZE,  Resources.MEMACC\_COMPARE\_BUFFER\_WORD\_SIZE\_PRE\_COMMENT | | |

{Ref: [3] MEMACC\_DAD\_CFG\_005\_003}

###### GenMemAccConfigSet

MEMACC\_TUD\_CLS\_002\_014:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccConfigSet | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Desc: List of Params of MemAccConfigSet container | None | |
| Range: | &MemAcc\_GstConfiguration[0] |
| **Generated Value** | MemAcc\_Config | | |
| **Description** | To generate a list of params of MemAcc\_Config  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET string preComment = CALL MemAccResources.MEMACC\_CONFIGSET\_PRE\_COMMENT  RETURN CALL genListOfParams WITH preComment,  Output.U5xPreCompileTime.MEMACC\_COMPARE\_BUFFER\_WORD\_SIZE, MemAccConfigSet | | |

{Ref: [3] MEMACC\_DAD\_CFG\_006\_001}

###### genListOfParams

MEMACC\_TUD\_CLS\_002\_015:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | genListOfParams | | |
| **Arguments** | string comment | Pre-comment string | |
| Range: | Structure for each Config Set |
| string name | Container | |
| Range: | MemAccConfigSet |
| **Return** | Type: BaseGenerationItem[]  Desc: Structure for Config Set | None | |
| Range: | Structure for each Config Set , Structure for Config Set |
| **Generated Value** | None | | |
| **Description** | This function is invoked by other function to generate list of param  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  LET nameItem = CALL IntermediateData.GetItemByPath with name  CALL result.Add WITH (CALL CommentGenerationItem WITH comment)  CALL result.Add WITH (CALL DefineGenerationItem WITH  String.Empty, String.Empty, nameItem.Childs[i].Name, nameItem.Childs[i].Value)  RETURN result.ToArray | | |

{Ref: N/A}

#### Renesas::Generator::MemAccCommon::Generation::MemAccU5xPbCfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5xPbCfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_PBcfg.c <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | MemAccU5xPbCfgFileGeneration | Protected | This is a default constructor for U5x MemAccU5xPbCfgFileGeneration |
| (2) | MemAccU5xPbCfgFileGeneration | Protected | This is a constructor for U5x MemAccU5xPbCfgFileGeneration |
| (3) | GenerateIncludeSection | Protected | To generate IncludeSection |
| (4) | GenMemAccVersionInfo | Protected | To generate version info |
| (5) | GenVersionCheck | Protected | To generate VersionCheck |
| (6) | GenerateCodingRuleViolations | Protected | To generate Coding Rule Violations section |
| (7) | GenMemAccStartSecConfigDataUnspecified | Protected | To generate MEMACC\_START\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED |
| (8) | GenMemAccSubAreaConfigStructure | Protected | To generate MemAcc\_SubAreaConfig |
| (9) | GenMemAccAreaConfigStructure | Protected | To generate MemAcc\_SubAreaConfig |
| (10) | GenMemAccInstInvocation | Protected | To generate MemAcc\_InstInvocation |
| (11) | GenMemAccGstConfiguration | Protected | To generate MemAcc\_GstConfiguration |
| (12) | GenMemAccStopSecConfigDataUnspecified | Protected | To generate MEMACC\_STOP\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED |
| (13) | GenMemAccPriority2AddrArea0 | Protected | To generate MemAcc\_Priority2AddrAreaId |

##### Fields

##### Methods

###### MemAccU5xPbCfgFileGeneration

MEMACC\_TUD\_CLS\_003\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |
| --- | --- |
| **Method Name** | MemAccU5xPbCfgFileGeneration |
| **Arguments** | None |
| **Return** | None |
| **Generated Value** | None |
| **Description** | This is a default constructor for U5x MemAccU5xPbCfgFileGeneration  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None |

{Ref: N/A}

###### MemAccU5xPbCfgFileGeneration

MEMACC\_TUD\_CLS\_003\_002:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | MemAccU5xPbCfgFileGeneration | | |
| **Arguments** | string fileName | Input | |
| Range: | String |
| string outputFolder | Input | |
| Range: | N/A |
| ILogger logger | Input | |
| Range: | Interface ILogger |
| IBasicConfiguration basicConfiguration | Input | |
| Range: | Interface IBasicConfiguration |
| IRuntimeConfiguration runtimeConfiguration | Input | |
| Range: | Interface IRuntimeConfiguration |
| IIntermediateData intermediateData | Input | |
| Range: | Interface IIntermediateData |
| **Return** | None | | |
| **Generated Value** | None | | |
| **Description** | This is a constructor for U5x MemAccU5xPbCfgFileGeneration  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### GenerateIncludeSection

MEMACC\_TUD\_CLS\_003\_003:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenerateIncludeSection | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: INCLUDE  Desc: Include Section | None | |
| Range: |  |
| **Generated Value** | include "MemAcc\_PBTypes.h" | | |
| **Description** | To generate IncludeSection  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  RETURN CALL StringGenerationItem WITH Resources.INCLUDE\_SECTION\_PBTYPE | | |

{Ref: N/A}

###### GenMemAccVersionInfo

MEMACC\_TUD\_CLS\_003\_004:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccVersionInfo | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: VERSION\_INFO  Desc: Version Information | None | |
| Range: | 4U, 9U, 0U, 1U, 0U |
| **Generated Value** | MEMACC\_PBCFG\_C\_AR\_RELEASE\_MAJOR\_VERSION MEMACC\_PBCFG\_C\_AR\_RELEASE\_MINOR\_VERSION MEMACC\_PBCFG\_C\_AR\_RELEASE\_REVISION\_VERSION MEMACC\_PBCFG\_C\_SW\_MAJOR\_VERSION MEMACC\_PBCFG\_C\_SW\_MINOR\_VERSION | | |
| **Description** | To generate version info  Algorithm: GLOBAL VARIABLE IN:  List of ret of BaseGenerationItem. RANGE: array of BaseGenerationItem  GLOBAL VARIABLE OUT:  None  PRECONDITION:  (1) List of ret of BaseGenerationItem: never null or empty   LET param =new Dictionary(string,string)   $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_AR\_RELEASE\_MAJOR\_VERSION",  Resources.PBCFG\_C\_AR\_RELEASE\_MAJOR\_VERSION\_PRE\_COMMENT  ,  $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_AR\_RELEASE\_MINOR\_VERSION", String.Empty  ,  $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_AR\_RELEASE\_REVISION\_VERSION", String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_SW\_MAJOR\_VERSION",  Resources.PBCFG\_C\_SW\_MAJOR\_VERSION\_PRE\_COMMENT ,  $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_SW\_MINOR\_VERSION", String.Empty ,  ;  FOREACH item in root.Childs.Where(x => param.Keys.Contains(x.Name))  CALL items.Add WITH CALL MemAccU5xUtils.CreateBasicParam  WITH $"item.Name", param[item.Name], String.Empty, item.Value  RETURN items.ToArray() | | |

{Ref: [3] MEMACC\_DAD\_CFG\_008\_001, MEMACC\_DAD\_CFG\_008\_002, MEMACC\_DAD\_CFG\_008\_003, MEMACC\_DAD\_CFG\_008\_004, MEMACC\_DAD\_CFG\_008\_005}

###### GenVersionCheck

MEMACC\_TUD\_CLS\_003\_005:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenVersionCheck | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: VERSION\_CHECK  Desc: Version Check | None | |
| Range: | VersionCheck\_Path |
| **Generated Value** | VersionCheck\_Path | | |
| **Description** | To generate VersionCheck  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  LET value = CALL IntermediateData.GetStringDataByPath WITH "/VersionCheck"  RETURN CALL StringGenerationItem WITH value | | |

{Ref: N/A}

###### GenerateCodingRuleViolations

MEMACC\_TUD\_CLS\_003\_006:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenerateCodingRuleViolations | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Section: CodingRule  Desc: Coding Rule Violations | None | |
| Range: | A string that describe Coding Rule Violations |
| **Generated Value** | A string that describe Coding Rule Violations | | |
| **Description** | To generate Coding Rule Violations section  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  RETURN CALL StringGenerationItem WITH Resources.CodingRule | | |

{Ref: N/A}

###### GenMemAccStartSecConfigDataUnspecified

MEMACC\_TUD\_CLS\_003\_007:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccStartSecConfigDataUnspecified | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: GLOBAL\_DATA  Desc: None | None | |
| Range: | #define MEMACC\_START\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED #include "MemAcc\_MemMap.h" |
| **Generated Value** | #define MEMACC\_START\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED #include "MemAcc\_MemMap.h" | | |
| **Description** | To generate MEMACC\_START\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  LET result = CALL BaseGenerationItem WITH  (CALL DefineGenerationItem WITH string.Empty, string.Empty,  Output.PostBuildTime.MEMACC\_START\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED, string.Empty,  hasNameInstanceSetting: false),  (CALL StringGenerationItem WITH Resources.INCLUDE\_MEMMAP)  RETURN result | | |

{Ref: N/A}

###### GenMemAccSubAreaConfigStructure

MEMACC\_TUD\_CLS\_003\_008:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccSubAreaConfigStructure | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Name: memaccStructTable  Section: GLOBAL\_DATA  Desc: Generate the Structure of MEMACC Configuration test | None | |
| Range: | Value for each structure members of struct MemAcc\_SubAreaConfig ddLogicStartAddr ddPhysicalStartAddr ddSubAreaLength enHwType ulMemMinReadSize MemMaxReadSize ulMemWritePageSize ulMemWriteBurstSize ulMemEraseSectorSize ulMemEraseBurstSize ulInstanceId ucNumberOfEraseRetries ucNumberOfWriteRetries blUseEraseBurst blUseWriteBurst |
| **Generated Value** | MemAcc\_SubAreaConfig | | |
| **Description** | To generate MemAcc\_SubAreaConfig  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None   LET memaccStructTable = null  LET intermediate = CALL IntermediateData.GetItemByPath WITH "MemAcc\_SubAreaConfig"  IF intermediate isn't NULL and intermediate.Childs.Count > 0 THEN  LET memaccStructTable = CALL StructGenerationItem WITH  SUB\_AREA\_CONFIG\_INDEX\_PRE\_COMMENT, String.Empty,  null, MemAccSubAddressAreaConfiguration, MEMACC\_CONFIGTYPE  FOR i = 0 TO intermediate.Childs.Count  LET child = intermediate.Childs[i]  childstruct = CALL StructGenerationItem WITH SUB\_AREA\_CONFIG\_INDEX\_PRE\_COMMENT, IndexOf(macro)  childstruct.AddChild(ddLogicStartAddr)  childstruct.AddChild(ddPhysicalStartAddr)  childstruct.AddChild(ddSubAreaLength)  childstruct.AddChild(enHwType)  childstruct.AddChild(ulMemMinReadSize)  childstruct.AddChild(MemMaxReadSize)  childstruct.AddChild(ulMemWritePageSize)  childstruct.AddChild(ulMemWriteBurstSize)  childstruct.AddChild(ulMemEraseSectorSize)  childstruct.AddChild(ulMemEraseBurstSize)  childstruct.AddChild(ulInstanceId)  childstruct.AddChild(ucNumberOfEraseRetries)  childstruct.AddChild(ucNumberOfWriteRetries)  childstruct.AddChild(blUseEraseBurst)  childstruct.AddChild(blUseWriteBurst)   RETURN memaccStructTable | | |

{Ref: [3] MEMACC\_DAD\_CFG\_010\_001, MEMACC\_DAD\_CFG\_010\_002, MEMACC\_DAD\_CFG\_010\_003, MEMACC\_DAD\_CFG\_010\_004, MEMACC\_DAD\_CFG\_010\_005, MEMACC\_DAD\_CFG\_010\_006, MEMACC\_DAD\_CFG\_010\_007, MEMACC\_DAD\_CFG\_010\_008, MEMACC\_DAD\_CFG\_010\_009, MEMACC\_DAD\_CFG\_010\_010, MEMACC\_DAD\_CFG\_010\_011, MEMACC\_DAD\_CFG\_010\_012, MEMACC\_DAD\_CFG\_010\_013, MEMACC\_DAD\_CFG\_010\_014, MEMACC\_DAD\_CFG\_010\_015, MEMACC\_DAD\_CFG\_010\_016}

###### GenMemAccAreaConfigStructure

MEMACC\_TUD\_CLS\_003\_009:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccAreaConfigStructure | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Name: memaccStructTable  Section: GLOBAL\_DATA  Desc: Generate the Structure of MemAcc\_GstAreaConfig | None | |
| Range: | Value for each structure members of struct MemAcc\_GstAreaConfig pJobEndNotificationPointer pSubAreaConfig usNumOfSubArea ucBufferAlignValue |
| **Generated Value** | MemAcc\_GstAreaConfig | | |
| **Description** | To generate MemAcc\_SubAreaConfig  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None   LET memaccStructTable = null  LET intermediate = CALL IntermediateData.GetItemByPath WITH "MemAcc\_SubAreaConfig"  IF intermediate isn't NULL THEN  LET a Dictionary<string, string> qacMessage = null  LET memaccStructTable = Initilize an StructGenerationItem object with null,  empty, qacMessage, MemAcc\_GstAreaConfig, MEMACC\_AREACONFIGTYPE  FOREACH macro in intermediate.Childs  LET child = intermediate.Childs[i]  childstruct = CALL StructGenerationItem WITH SUB\_AREA\_CONFIG\_INDEX\_PRE\_COMMENT, intermediate.Childs.IndexOf(macro), macro.Name  childstruct.AddChild(MemAccJobEndNotification)  childstruct.AddChild(pAddrAreaConfig)  childstruct.AddChild(MemAccNumberofSubArea)  childstruct.AddChild(MemAccBufferAlignmentValue)  RETURN memaccStructTable | | |

{Ref: [3] MEMACC\_DAD\_CFG\_011\_001, MEMACC\_DAD\_CFG\_011\_002, MEMACC\_DAD\_CFG\_011\_003, MEMACC\_DAD\_CFG\_011\_004, MEMACC\_DAD\_CFG\_011\_005}

###### GenMemAccInstInvocation

MEMACC\_TUD\_CLS\_003\_010:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccInstInvocation | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Name: memaccStructTable  Section: GLOBAL\_DATA  Desc: Generate the MemAcc\_InstInvocation | None | |
| Range: | MEMACC\_DIRECT\_STATIC |
| **Generated Value** | MemAcc\_InstInvocation | | |
| **Description** | To generate MemAcc\_InstInvocation  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None   LET memaccStructTable = init an StructGenerationItem object with INST\_INVOCATION\_STRUCTURE\_PRE\_COMMENT,  MemAcc\_GstInstInvocation, MEMACC\_INSTINVOCATIONTYPE  LET intermediate = CALL IntermediateData.GetItemByPath WITH "MemAcc\_Invo"  IF intermediate isn't NULL THEN  FOREACH macro in intermediate.Childs  LET child = intermediate.Childs[i]  childstruct = CALL StructGenerationItem WITH INVO\_INDEX\_PRE\_COMMENT, intermediate.Childs.IndexOf(macro), macro.Name  childstruct.AddChild(EnMemAccInstInvocation)  RETURN memaccStructTable | | |

{Ref: [3] MEMACC\_DAD\_CFG\_009\_001}

###### GenMemAccGstConfiguration

MEMACC\_TUD\_CLS\_003\_011:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccGstConfiguration | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Name: MemAccStructTable  Section: GLOBAL\_DATA  Desc: Generate the Structure for each Config Set | None | |
| Range: | Value for each structure members of struct MemAcc\_GstConfiguration ulStartOfDbToc pPriority2AddrAreaId pAddrAreaConfig pInstInvocation |
| **Generated Value** | MemAcc\_GstConfiguration | | |
| **Description** | To generate MemAcc\_GstConfiguration  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None   LET MemAccStructTable = CALL StructGenerationItem WITH  CONFIG\_SET\_STRUCTURE\_PRE\_COMMENT, String.Empty,  null, MemAcc\_GstConfiguration, MemAcc\_CONFIGTYPE  LET intermediate = CALL IntermediateData.GetItemByPath WITH "MemAcc\_GstConfiguration"  IF intermediate isn't NULL THEN  FOR i = 0 TO intermediate.Childs.Count  LET child = intermediate.Childs[i]  childstruct = CALL StructGenerationItem WITH CONFIG\_SET\_INDEX\_PRE\_COMMENT, IndexOf(macro)  childstruct.AddChild(UlStartOfDbToc)  childstruct.AddChild(pPriority2AddrAreaId)  childstruct.AddChild(pAddrAreaConfig)  childstruct.AddChild(pInstInvocation)  MemAccStructTable.AddChild(childstruct)  RETURN MemAccStructTable | | |

{Ref: [3] MEMACC\_DAD\_CFG\_007\_001, MEMACC\_DAD\_CFG\_007\_002, MEMACC\_DAD\_CFG\_007\_001, MEMACC\_DAD\_CFG\_007\_001, MEMACC\_DAD\_CFG\_007\_001, MEMACC\_DAD\_CFG\_010\_006, MEMACC\_DAD\_CFG\_010\_007, MEMACC\_DAD\_CFG\_006\_001}

###### GenMemAccStopSecConfigDataUnspecified

MEMACC\_TUD\_CLS\_003\_012:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccStopSecConfigDataUnspecified | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: GLOBAL\_DATA  Desc: None | None | |
| Range: | #define MEMACC\_STOP\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED #include "MemAcc\_MemMap.h" |
| **Generated Value** | #define MEMACC\_STOP\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED #include "MemAcc\_MemMap.h" | | |
| **Description** | To generate MEMACC\_STOP\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  LET result = CALL BaseGenerationItem WITH  (CALL DefineGenerationItem WITH string.Empty, string.Empty,  Output.PostBuildTime.MEMACC\_STOP\_SEC\_CONFIG\_DATA\_POSTBUILD\_UNSPECIFIED, string.Empty,  hasNameInstanceSetting: false),  (CALL StringGenerationItem WITH Resources.INCLUDE\_MEMMAP)  RETURN result | | |

{Ref: N/A}

###### GenMemAccPriority2AddrArea0

MEMACC\_TUD\_CLS\_003\_013:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccPriority2AddrArea0 | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem  Name: memaccStructTable  Section: GLOBAL\_DATA  Desc: Generate the MemAcc\_Priority2AddrAreaId0 | None | |
| Range: |  |
| **Generated Value** | MemAcc\_InstInvocation | | |
| **Description** | To generate MemAcc\_Priority2AddrAreaId  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None   LET memaccStructTable = init an StructGenerationItem object with P2A\_PRE\_COMMENT,  MemAcc\_Priority2AddrAreaId0, MEMACC\_PRIORITY2ADDRAREA0TYPE  LET intermediate = CALL IntermediateData.GetItemByPath WITH "pPriority2AddrAreaId"  IF intermediate isn't NULL THEN  FOREACH macro in intermediate.Childs  LET child = intermediate.Childs[i]  childstruct = CALL StructGenerationItem WITH INVO\_INDEX\_PRE\_COMMENT, intermediate.Childs.IndexOf(macro), macro.Name  childstruct.AddChild(EnMemAccInstInvocation)  RETURN memaccStructTable | | |

{Ref: [3] MEMACC\_DAD\_CFG\_009\_001}

### Intermediate

#### UML

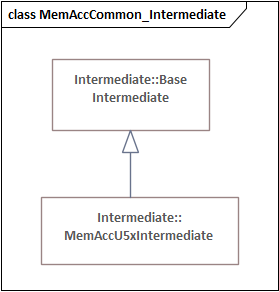


Figure 5: Common::Intermediate

MemAccU5xIntermediate class is inherited from BaseIntermediate class of Generic and contains common Intermediate of MemAccU5Lx. This class calculates value of parameters that is used to output header and source file.

#### Renesas::Generator::MemAccCommon::Intermediate::MemAccU5xIntermediate

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5xIntermediate.cs |
| **Description** | This file calculates value of parameters that is used to output header and source file <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | MemAccU5xIntermediate | Protected | This is a default constructor for U5x MemAccU5xIntermediate |
| (2) | MemAccU5xIntermediate | Protected | This is a constructor for U5x MemAccU5xIntermediate |
| (3) | ComputeMemAccVersionInformation | Protected | To compute version information for MemAcc |
| (4) | ComputeMemAccConfigSet | Protected | To compute value of ComputeMemAccConfigSet |
| (5) | ComputeMemInstanceIDValue | Protected | To compute value of MEMACC\_INSTANCE\_ID\_VALUE |
| (6) | ComputeMemAccAddressAreaId | Protected | To compute value of MEMACC\_ADDRESS\_AREA\_ID |
| (7) | ComputeMemStartAddress | Protected | To compute value of MemStartAddress |
| (8) | ComputeMemMinReadSize | Protected | To compute value of MemMinReadSize |
| (9) | ComputeMemMaxReadSize | Protected | To compute value of MemMaxReadSize |
| (10) | ComputeMemWritePageSize | Protected | To compute value of MemWritePageSize |
| (11) | ComputeMemWriteBurstSize | Protected | To compute value of MemWriteBurstSize |
| (12) | ComputeMemEraseBurstSize | Protected | To compute value of MemEraseBurstSize |
| (13) | ComputeMemAccHWType | Protected | To compute value of MemAccHWType |
| (14) | ComputepMemEraseSectorSize | Protected | To compute value of MemEraseSectorSize |
| (15) | ComputeMemAccAddressAreaPriority | Protected | To compute value of MEMACC\_ADDRESS\_AREA\_PRIORITY |
| (16) | ComputeMemAccBufferAlignmentValue | Protected | To compute value of MEMACC\_BUFFER\_ALIGNMENT\_VALUE |
| (17) | ComputeJobEndNotificationName | Protected | To compute value of MemAccJobEndNotification |
| (18) | ComputeStartOfDbToc | Protected | To compute value of StartOfDbToc |
| (19) | ComputeMemAccGstConfiguration | Protected | To compute/add each element of struct MemAcc\_GstConfiguration[]. |
| (20) | ComputeMemAccSubAreaConfig | Protected | To compute/add each element of struct MemAcc\_SubAreaConfig[]. |
| (21) | ComputeMemAccMaxAreaAddress | Protected | To compute value of MEMACC\_MAX\_ADDRESS\_AREA\_ID |
| (22) | ComputeMemAccHighestPriority | Protected | To compute value of MEMACC\_HIGHEST\_PRIORITY |
| (23) | ComputeMemAccNumOfMemInstance | Protected | To compute value of MEMACC\_NUMBER\_OF\_MEM\_INSTANCE |
| (24) | ComputeMemAccCompareBufferWordSize | Protected | To compute value of MEMACC\_COMPARE\_BUFFER\_WORD\_SIZE macro |
| (25) | ComputeMemAccGstInvocation | Protected | To compute value of MemAccGstInvocation |
| (26) | ComputeMemAccJobEndNotification | Protected | To process to generate JobEndNotification |
| (27) | ComputeCBKMemAccJobEndNotification | Protected | To process to generate CBK JobEndNotification |
| (28) | ComputeMemAccGstAreaConfig | Protected | To process to generate MemAcc\_GstAreaConfig |
| (29) | ComputeMemAccParamsOnOff | Protected | To compute value of 'OnOff' parameters |
| (30) | ComputepSubAreaConfig | Protected | To compute sub area config with input index. |
| (31) | ComputeMemAccSubAreaLength | Protected | To compute length of MemAcc sub area |
| (32) | ComputeMemAccNumberofSubArea | Protected | To compute number of MemAcc sub area |
| (33) | ComputeMemAccpPriority2AddrArea0 | Protected | To compute Priority to Address of Area0 |

##### Fields

##### Methods

###### MemAccU5xIntermediate

MEMACC\_TUD\_CLS\_004\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |
| --- | --- |
| **Method Name** | MemAccU5xIntermediate |
| **Arguments** | None |
| **Return** | None |
| **Generated Value** | None |
| **Description** | This is a default constructor for U5x MemAccU5xIntermediate  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None |

{Ref: N/A}

###### MemAccU5xIntermediate

MEMACC\_TUD\_CLS\_004\_002:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | MemAccU5xIntermediate | | |
| **Arguments** | ILogger logger | Input | |
| Range: | Interface ILogger |
| IRepository repo | Input | |
| Range: | Interface IBasicConfiguration |
| IIntermediateData interdata | Input | |
| Range: | Interface IRepository |
| IBasicConfiguration basicConfig | Input | |
| Range: | Interface IIntermediateData |
| **Return** | None | | |
| **Generated Value** | None | | |
| **Description** | This is a constructor for U5x MemAccU5xIntermediate  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### ComputeMemAccVersionInformation

MEMACC\_TUD\_CLS\_004\_003:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccVersionInformation | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: To store version information | None | |
| Range: | Version info |
| **Generated Value** | None | | |
| **Description** | To compute version information for MemAcc  Algorithm: GLOBAL VARIABLE IN:  Repo RANGE: Null or Repository  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  LET root = CALL Repo.GetVersionInformation()  RETURN root | | |

{Ref: [3] MEMACC\_DAD\_CFG\_011\_001, MEMACC\_DAD\_CFG\_011\_002, MEMACC\_DAD\_CFG\_011\_003, MEMACC\_DAD\_CFG\_011\_004, MEMACC\_DAD\_CFG\_011\_005, MEMACC\_DAD\_CFG\_001\_001, MEMACC\_DAD\_CFG\_001\_002, MEMACC\_DAD\_CFG\_001\_003, MEMACC\_DAD\_CFG\_001\_004, MEMACC\_DAD\_CFG\_001\_005, MEMACC\_DAD\_CFG\_001\_006, MEMACC\_DAD\_CFG\_001\_007, MEMACC\_DAD\_CFG\_001\_008, MEMACC\_DAD\_CFG\_001\_009, MEMACC\_DAD\_CFG\_001\_010, MEMACC\_DAD\_CFG\_001\_010, MEMACC\_DAD\_CFG\_001\_011, MEMACC\_DAD\_CFG\_001\_012, MEMACC\_DAD\_CFG\_001\_013, MEMACC\_DAD\_CFG\_001\_014, MEMACC\_DAD\_CFG\_008\_001, MEMACC\_DAD\_CFG\_008\_002, MEMACC\_DAD\_CFG\_008\_003, MEMACC\_DAD\_CFG\_008\_004, MEMACC\_DAD\_CFG\_008\_005}

###### ComputeMemAccConfigSet

MEMACC\_TUD\_CLS\_004\_004:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccConfigSet | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: MemAccConfigSet handles | None | |
| Range: | 1 |
| **Generated Value** | None | | |
| **Description** | To compute value of ComputeMemAccConfigSet  Algorithm: GLOBAL VARIABLE IN:  parameter MemAccConfigSet Range : 1  GLOBAL VARIABLE OUT:  None  PRECONDITION :  All container MemAccConfigSet in CDF is not null  LET result = NEW BaseIntermediateItem(U5xInput.U5xMemAccMap.MemAccConfigSet, NULL)  LET MemAccConfigSets = Repo.GetContainersByDefName  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccAddressAreaConfiguration)  LET count = 0  FOR EACH MemAccConfigSet IN MemAccConfigSets  IF NOT EMPTY(MemAccConfigSet.ShortName)  CALL result.AddChild WITH NEW BaseIntermediateItem(U5xConstants.MemAccPreShortname,  String.Format(MemAccResources.GST\_CONFIGURATION, BasicConfiguration.ToInstanceValue(), count))  SET count = count + 1  END IF  END FOR  RETURN result | | |

{Ref: [3] MEMACC\_DAD\_CFG\_006\_001}

###### ComputeMemInstanceIDValue

MEMACC\_TUD\_CLS\_004\_005:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemInstanceIDValue | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Instance ID of the MemAcc | None | |
| Range: | 0 |
| **Generated Value** | None | | |
| **Description** | To compute value of MEMACC\_INSTANCE\_ID\_VALUE  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET result = CALL BaseIntermediateItem WITH U5xOutput.U5xPreCompileTime.MEMACC\_INSTANCE\_ID\_VALUE,  Constant.ZERO + "U"  RETURN result | | |

{Ref: [3] MEMACC\_DAD\_CFG\_002\_001}

###### ComputeMemAccAddressAreaId

MEMACC\_TUD\_CLS\_004\_006:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccAddressAreaId | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Number of cells to be tested in background mode without checking user requests. | None | |
| Range: | (uint16)0x0000UL to (uint16)0xFFFFUL |
| **Generated Value** | None | | |
| **Description** | To compute value of MEMACC\_ADDRESS\_AREA\_ID  Algorithm: GLOBAL VARIABLE IN:  MemAccAddressAreaId Range: 0 to 65535  GLOBAL VARIABLE OUT:  None  PRECONDITION :  MemAccAddressAreaId is not null and empty  LET AddressAreaId = the return value by CALL GetParameterValue  WITH paramName is MemAccAddressAreaId in container MemAccAddressAreaConfiguration.  LET result = BaseIntermediateItem object with name MEMACC\_ADDRESS\_AREA\_ID  and value (uint16)AddressAreaId   RETURN result | | |

{Ref: NA}

###### ComputeMemStartAddress

MEMACC\_TUD\_CLS\_004\_007:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemStartAddress | | |
| **Arguments** | None | | |
| **Return** | Type: string  Desc: start address of mem | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute value of MemStartAddress  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET memAccSectorBatchRef = the return value by CALL GetReferenceValue  WITH moduleName is MemAcc, defName is MemAccSectorBatchRef.  IF memAccSectorBatchRef is not Null:  LET startAddress = sectorBatch.GetParameterValue with para name is MemStartAddress  RETURN startAddress | | |

{Ref: NA}

###### ComputeMemMinReadSize

MEMACC\_TUD\_CLS\_004\_008:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemMinReadSize | | |
| **Arguments** | None | | |
| **Return** | Type: string  Desc: minimum unit value to read of Mem | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute value of MemMinReadSize  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET memAccSectorBatchRef = the return value by CALL GetReferenceValue  WITH moduleName is MemAcc, defName is MemAccSectorBatchRef.  IF memAccSectorBatchRef is not Null:  LET Container mcuClockSettingConfig = Repo.GetContainerByShortNamePath with moduleName is Mem, defName is MemMinReadSize.  LET memMinReadSize = CALL Repo.GetParameterValue with moduleName is Mem and defName is MemMinReadSize.  RETURN memMinReadSize | | |

{Ref: NA}

###### ComputeMemMaxReadSize

MEMACC\_TUD\_CLS\_004\_009:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemMaxReadSize | | |
| **Arguments** | None | | |
| **Return** | Type: string  Desc: maximum value of Mem to read | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute value of MemMaxReadSize  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET memAccSectorBatchRef = the return value by CALL GetReferenceValue  WITH moduleName is MemAcc, defName is MemAccSectorBatchRef.  IF memAccSectorBatchRef is not Null:  LET memMaxReadSize = Repo.GetContainerByShortNamePath with moduleName is Mem, defName is MemMaxReadSize.  RETURN memMaxReadSize | | |

{Ref: NA}

###### ComputeMemWritePageSize

MEMACC\_TUD\_CLS\_004\_010:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemWritePageSize | | |
| **Arguments** | None | | |
| **Return** | Type: string  Desc: Size of Page to write to Mem | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute value of MemWritePageSize  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET memAccSectorBatchRef = the return value by CALL GetReferenceValue  WITH moduleName is MemAcc, defName is MemAccSectorBatchRef.  IF memAccSectorBatchRef is not Null:  LET writePageSize = Repo.GetContainerByShortNamePath with moduleName is Mem, defName is MemWritePageSize.  RETURN writePageSize | | |

{Ref: NA}

###### ComputeMemWriteBurstSize

MEMACC\_TUD\_CLS\_004\_011:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemWriteBurstSize | | |
| **Arguments** | None | | |
| **Return** | Type: string  Desc: Size of Burst to write to Mem | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute value of MemWriteBurstSize  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET memAccSectorBatchRef = the return value by CALL GetReferenceValue  WITH moduleName is MemAcc, defName is MemAccSectorBatchRef.  IF memAccSectorBatchRef is not Null:  LET MemWriteBurstSize = Repo.GetContainerByShortNamePath with moduleName is Mem, defName is MemWritePageSize.  RETURN MemWriteBurstSize | | |

{Ref: N/A}

###### ComputeMemEraseBurstSize

MEMACC\_TUD\_CLS\_004\_012:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemEraseBurstSize | | |
| **Arguments** | None | | |
| **Return** | Type: string  Desc: Size of Burst to erase to Mem | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute value of MemEraseBurstSize  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET memAccSectorBatchRef = the return value by CALL GetReferenceValue  WITH moduleName is MemAcc, defName is MemAccSectorBatchRef.  IF memAccSectorBatchRef is not Null:  LET eraseBurstSize = Repo.GetContainerByShortNamePath with moduleName is Mem, defName is MemEraseBurstSize.  RETURN eraseBurstSize | | |

{Ref: NA}

###### ComputeMemAccHWType

MEMACC\_TUD\_CLS\_004\_013:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccHWType | | |
| **Arguments** | None | | |
| **Return** | Type: string  Desc: N/A | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute value of MemAccHWType  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  RETURN null | | |

{Ref: NA}

###### ComputepMemEraseSectorSize

MEMACC\_TUD\_CLS\_004\_014:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputepMemEraseSectorSize | | |
| **Arguments** | None | | |
| **Return** | Type: string  Desc: Size of sector to erase in Mem | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute value of MemEraseSectorSize  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET eraseSectorSize = the return value by CALL GetParameterValue  WITH moduleName is Mem, defName is MemEraseSectorSize.  RETURN eraseSectorSize | | |

{Ref: NA}

###### ComputeMemAccAddressAreaPriority

MEMACC\_TUD\_CLS\_004\_015:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccAddressAreaPriority | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Number of cells to be tested in background mode without checking user requests. | None | |
| Range: | (uint16)0x0000UL to (uint16)0xFFFFUL |
| **Generated Value** | None | | |
| **Description** | To compute value of MEMACC\_ADDRESS\_AREA\_PRIORITY  Algorithm: GLOBAL VARIABLE IN:  MemAccAddressAreaPriority Range: 0 to 65535  GLOBAL VARIABLE OUT:  None  PRECONDITION :  MemAccAddressAreaPriority is not null and empty  LET AddressAreaPriority = the return value by CALL GetParameterValue  WITH paramName is MemAccAddressAreaPriority in container MemAccAddressAreaConfiguration.  LET result = BaseIntermediateItem object with name MEMACC\_ADDRESS\_AREA\_PRIORITY  and value (uint16)AddressAreaPriority   RETURN result | | |

{Ref: NA}

###### ComputeMemAccBufferAlignmentValue

MEMACC\_TUD\_CLS\_004\_016:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccBufferAlignmentValue | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Number of byte that MemAcc buffer align. | None | |
| Range: | 0 to 255 |
| **Generated Value** | None | | |
| **Description** | To compute value of MEMACC\_BUFFER\_ALIGNMENT\_VALUE  Algorithm: GLOBAL VARIABLE IN:  MemAccBufferAlignmentValue  GLOBAL VARIABLE OUT:  None  PRECONDITION :  MemAccBufferAlignmentValue is not null and empty  LET memAccAddressAreaConfiguration = the return value by CALL GetContainerByDefName  WITH moduleName is MemAcc and defName is MemAccAddressAreaConfiguration.  LET bufferAlignmentValue = the return value by CALL memAccAddressAreaConfiguration.GetParameterValue  WITH paraName is MemAccBufferAlignmentValue.  LET result = BaseIntermediateItem object with name MEMACC\_BUFFER\_ALIGNMENT\_VALUE  and value (uint16)bufferAlignmentValue   RETURN result | | |

{Ref: NA}

###### ComputeJobEndNotificationName

MEMACC\_TUD\_CLS\_004\_017:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeJobEndNotificationName | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: call back function name for MemAccJobEndNotification | None | |
| Range: | (extern FUNC(void, MEMACC\_APPL\_CODE) <Name of="" parameter="" memaccjobendnotification>=""> (void)) |
| **Generated Value** | None | | |
| **Description** | To compute value of MemAccJobEndNotification  Algorithm: GLOBAL VARIABLE IN:  MemAccJobEndNotification Range: configured function name/NULL\_PTR  GLOBAL VARIABLE OUT:  None  PRECONDITION :  MemAccJobEndNotification is not null and empty  LET ret = initialize a BaseIntermediateItem WITH name is CALLBACK\_FUNCTION\_PROTOTYPE and value is empty string.  LET listConfigSet = list of memAccAddressAreaConfig containers.  FOREACH container memAccAddressAreaConfig in listConfigSet  LET notification = Value of parameter MemAccJobEndNotification in container memAccAddressAreaConfig  IF notification is not null THEN  LET notifiValue = value of notification.  IF uniqueList doesn't contains current notifiValue and the return value by CALL IsNullPointer WITH notifiValue is not null or empty string THEN  LET add notification to uniqueList.  LET add a BaseIntermediateItem WITH value is a string "extern FUNC(void, MEMACC\_APPL\_CODE) {notifiValue} (void);" to child of ret.  ELSE  Do nothing  ELSE  Do nothing  ELSE  Do nothing  RETURN result | | |

{Ref: [3] MEMACC\_DAD\_CFG\_012\_006}

###### ComputeStartOfDbToc

MEMACC\_TUD\_CLS\_004\_018:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeStartOfDbToc | | |
| **Arguments** | None | | |
| **Return** | Type: string  Desc: ulStartOfDbToc | None | |
| Range: | 248971776 |
| **Generated Value** | None | | |
| **Description** | To compute value of StartOfDbToc  Algorithm: GLOBAL VARIABLE IN  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  LET result = $"0x{Repo.GetStartOfDbToc()}UL"  RETURN result | | |

{Ref: [3] MEM\_DAD\_CFG\_009\_001}

###### ComputeMemAccGstConfiguration

MEMACC\_TUD\_CLS\_004\_019:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccGstConfiguration | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Content of struct MemAccGstConfiguration | None | |
| Range: | Value for each structure members of struct MemAccGstConfiguration pPriority2AddrAreaId pAddrAreaConfig pInstInvocation |
| **Generated Value** | None | | |
| **Description** | To compute/add each element of struct MemAcc\_GstConfiguration[].  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET retList = initialize a BaseIntermediateItem WITH name is MemAcc\_AddressAreaConfiguration and value is String.Empty.  LET listConfigSet = return value by CALL GetContainersByDefName WITH moduleName  is MemAcc and defName is MemAccAddressAreaConfiguration.  FOREACH container memAccAddressAreaConfiguration in listmemAccAddressAreaConfigurations  LET memAccAddressAreaConfigurations = list all memAccAddressAreaConfiguration  LET childindex = initialize a BaseIntermediateItem WITH name is ShortName of  MemAcc\_GstConfiguration and value is empty string.  IF MemAccAddressAreaPriority as less 0  LET childindex = initialize a BaseIntermediateItem WITH name is ShortName of  pPriority2AddrAreaId and value  THEN pPriority2AddrAreaId as NULL POINTER  LET childindex = initialize a BaseIntermediateItem WITH name is ShortName of  pAddrAreaConfig and value  THEN pAddrAreaConfig as NULL POINTER  LET add a BaseIntermediateItem WITH name is "pInstInvocation" and value of childIndex  LET add childs of childIndex to child of ret.   RETURN retList | | |

{Ref: [3] MEMACC\_DAD\_CFG\_007\_001, MEMACC\_DAD\_CFG\_007\_002, MEMACC\_DAD\_CFG\_007\_003, MEMACC\_DAD\_CFG\_007\_004, MEMACC\_DAD\_CFG\_007\_005}

###### ComputeMemAccSubAreaConfig

MEMACC\_TUD\_CLS\_004\_020:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccSubAreaConfig | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Content of struct MemAcc\_SubAreaConfig | None | |
| Range: | Value for each structure members of struct MemAcc\_SubAreaConfig |
| **Generated Value** | None | | |
| **Description** | To compute/add each element of struct MemAcc\_SubAreaConfig[].  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET memSectorBatchStructure = initialize a BaseIntermediateItem WITH name is Mem\_SectorBatchStructure and value is String.Empty.  LET memSectorBatch = initialize a BaseIntermediateItem WITH name is Mem\_SectorBatchStructure and value is String.Empty.  LET ItemValue memaccSectorBatchRef = return value by CALL GetReferenceValue WITH moduleName  is MemAcc and defName is MemAccSectorBatchRef.  LET Container sectorBatchConfig = return value by CALL GetContainerByDefName WITH moduleNamem, MemSectorBatch  LET List Container memSectorBatchConfigs return value by CALL GetContainersByDefName WITH moduleName is Mem and defName is MemSectorBatch  LET BaseIntermediateItem ret = initialize a BaseIntermediateItem WITH name is MemAcc\_GstSubAddressAreaConfiguration and value is String.Empty.  LET List Container memaccAreas by CALL GetContainersByDefName WITH moduleName is MemAcc and defName is MemAccAddressAreaConfiguration   FOREACH container memaccArea in memaccAreas  LET list memacclist = list all memaccArea.GetChildsByDefName with defName is MemAccSubAddressAreaConfiguration  IF number memacclist greater than 0  FOREACH container memaccParam in memacclist  LET childindex = initialize a BaseIntermediateItem WITH name is ShortName of  MemAccSubAddressArea and value is empty  LET ddLogicStartAddr = return value of GetParameterValue with para name is MemAccLogicalStartAddress  LET add a BaseIntermediateItem WITH name is "ddLogicStartAddr" and value of ddLogicStartAddr  LET add a BaseIntermediateItem WITH name is "enHwType" and value is return value by call ComputeMemAccHWType()  LET add a BaseIntermediateItem WITH name is "ulMemInstanceID" and value ZERO   LET ucNumberOfEraseRetries = return value of GetParameterValue with para name is MemAccNumberOfEraseRetries  LET add a BaseIntermediateItem WITH name is "ucNumberOfEraseRetries" and value of ucNumberOfEraseRetries   LET ucNumberOfWriteRetries = return value of GetParameterValue with para name is MemAccNumberOfWriteRetries  LET add a BaseIntermediateItem WITH name is "ucNumberOfWriteRetries" and value of ucNumberOfWriteRetries   LET bool memAccUseEraseBurst = return value of GetParameterValue with para name is MemAccUseEraseBurst  LET string ucMemAccUseEraseBurst = "0x00U"  IF memAccUseEraseBurst is true THEN:  ucMemAccUseEraseBurst = "0x01U"  LET add a BaseIntermediateItem WITH name is "UcMemAccUseEraseBurst" and value of UcMemAccUseEraseBurst   LET bool memAccUseWriteBurst = return value of GetParameterValue with para name is memAccUseWriteBurst  LET string ucMemAccUseWriteBurst = "0x00U"  IF memAccUseWriteBurst is true THEN:  ucMemAccUseWriteBurst = "0x01U"  LET add a BaseIntermediateItem WITH name is "ucMemAccUseWriteBurst" and value of ucMemAccUseWriteBurst   LET add Child with childindex to ret   RETURN retList | | |

{Ref: [3] MEMACC\_DAD\_CFG\_010\_001, MEMACC\_DAD\_CFG\_010\_002, MEMACC\_DAD\_CFG\_010\_003, MEMACC\_DAD\_CFG\_010\_004, MEMACC\_DAD\_CFG\_010\_005, MEMACC\_DAD\_CFG\_010\_006, MEMACC\_DAD\_CFG\_010\_007, MEMACC\_DAD\_CFG\_010\_008}

###### ComputeMemAccMaxAreaAddress

MEMACC\_TUD\_CLS\_004\_021:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccMaxAreaAddress | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Maximum address area ID of the MemAcc | None | |
| Range: | 2 |
| **Generated Value** | None | | |
| **Description** | To compute value of MEMACC\_MAX\_ADDRESS\_AREA\_ID  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET Container memaccGeneral = CALL GetContainerByDefName WITH UMemAcc, MemAccGeneral  LET ItemValue memaccMaxAreaAddress = CALL GetParameterValue WITH MemAccMaxAddressAreaID  LET memaccMaxAreaAddressValue = Zero  IF memaccMaxAreaAddress is not null:  memaccMaxAreaAddressValue = memaccMaxAreaAddress.value   LET result = init an object of BaseIntermediateItem with name is MEMACC\_MAX\_ADDRESS\_AREA\_ID, $"{memaccMaxAreaAddressValue}" + "U"  RETURN result | | |

{Ref: N/A}

###### ComputeMemAccHighestPriority

MEMACC\_TUD\_CLS\_004\_022:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccHighestPriority | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Defines the Highest Priority of the MemAcc | None | |
| Range: | 0..65535 |
| **Generated Value** | None | | |
| **Description** | To compute value of MEMACC\_HIGHEST\_PRIORITY  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET Container memaccGeneral = CALL GetContainerByDefName WITH UMemAcc, MemAccGeneral  LET ItemValue memaccHighestPriority = CALL GetParameterValue WITH MemAccHighestPriority  LET memaccMaxAreaAddressValue = Zero  IF memaccHighestPriority is not null:  memaccValue = memaccHighestPriority.value   LET result = init an object of BaseIntermediateItem with name is MEMACC\_HIGHEST\_PRIORITY, $"{memaccValue}" + "U"  RETURN result | | |

{Ref: N/A}

###### ComputeMemAccNumOfMemInstance

MEMACC\_TUD\_CLS\_004\_023:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccNumOfMemInstance | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Defines number of MemInstance ID of the MemAcc | None | |
| Range: | 1..65535 |
| **Generated Value** | None | | |
| **Description** | To compute value of MEMACC\_NUMBER\_OF\_MEM\_INSTANCE  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET Container memaccGeneral = CALL GetContainerByDefName WITH MemAcc, MemAccGeneral  LET ItemValue memaccNumberOfMemInstance = CALL GetParameterValue WITH MemAccNumberOfMemInstance  LET memaccValue = Zero  IF memaccNumberOfMemInstance is not null:  memaccValue = memaccNumberOfMemInstance.value   LET result = init an object of BaseIntermediateItem with name is MEMACC\_NUMBER\_OF\_MEM\_INSTANCE, $"{memaccValue}" + "U"  RETURN result | | |

{Ref: N/A}

###### ComputeMemAccCompareBufferWordSize

MEMACC\_TUD\_CLS\_004\_024:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccCompareBufferWordSize | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: size of compare buffer word | None | |
| Range: | 128 |
| **Generated Value** | None | | |
| **Description** | To compute value of MEMACC\_COMPARE\_BUFFER\_WORD\_SIZE macro  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### ComputeMemAccGstInvocation

MEMACC\_TUD\_CLS\_004\_025:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccGstInvocation | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: MemAccGstInvocation | None | |
| Range: | MEMACC\_DIRECT\_STATIC |
| **Generated Value** | None | | |
| **Description** | To compute value of MemAccGstInvocation  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET result = BaseIntermediateItem object with name MemAcc\_Invo  and value empty  LET IList Container memaccAreas by CALL GetContainersByDefName with MemAcc and MemAccAddressAreaConfiguration  FOREACH memaccArea in memaccAreas:  LET ILIST<container> memacclist = CALL memaccArea.GetChildsByDefName with MemAccSubAddressAreaConfiguration  LET BaseIntermediateItem childindex = null  IF memacclist.Count greater than 0:  LET childindex = initilize an BaseIntermediateItem object with ShortName, Empty  CALL childindex.AddChild(new BaseIntermediateItem(U5xOutput.U5xPostBuildTime.EnMemAccInstInvocation,  ComputeMemAccInstInvocation().Value.ToString()))  CALL result.AddChild(childindex)  RETURN result | | |

{Ref: NA}

###### ComputeMemAccJobEndNotification

MEMACC\_TUD\_CLS\_004\_026:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccJobEndNotification | | |
| **Arguments** | None | | |
| **Return** | Type: string | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To process to generate JobEndNotification  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET ItemValue memaccJobEndNotification by CALL GetContainersByDefName with MemAcc and MemAccJobEndNotificationName  LET string result = Empty  IF memaccJobEndNotification != null and memaccJobEndNotification.Value is not nullptr:  Let result = CALL memaccJobEndNotification.Value<string>  ELSE:  LET result = NULL\_PTR  RETURN result | | |

{Ref: NA}

###### ComputeCBKMemAccJobEndNotification

MEMACC\_TUD\_CLS\_004\_027:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeCBKMemAccJobEndNotification | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To process to generate CBK JobEndNotification  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  LET outStr = init an StringBuilder object  LET IList Container memacc by CALL GetContainersByDefName with MemAcc and MemAccAddressAreaConfiguration  FOREACH memacc1 in memacc:  LET ItemValue notification = CALL memacc1.GetParameterValue with MemAccJobEndNotificationName  IF notification != null and notification.Value is not nullptr:  Let CALL outStr.Append(MemAccResources.MemAcc\_APPL\_CODE + notification.Value<string>() + MemAccResources.EndNotificationType + Environment.NewLine)  LET result = Init BaseIntermediateItem object with CBKMemAccJobEndNotification, outStr.ToString  RETURN result | | |

{Ref: NA}

###### ComputeMemAccGstAreaConfig

MEMACC\_TUD\_CLS\_004\_028:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccGstAreaConfig | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To process to generate MemAcc\_GstAreaConfig  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  INITIALIZE ret AS NEW BaseIntermediateItem WITH U5xOutput.U5xPostBuildTime.MemAcc\_AddressAreaConfig, EMPTY STRING  INITIALIZE memAccAddressAreaConfigurations AS LIST FROM Repo.GetContainersByDefName WITH U5xInput.U5xMemAccMap.MemAcc,  U5xInput.U5xMemAccMap.MemAccAddressAreaConfiguration  FOR EACH memAccAddressAreaConfiguration IN memAccAddressAreaConfigurations  INITIALIZE childindex AS NEW BaseIntermediateItem WITH INDEX OF memAccAddressAreaConfiguration, EMPTY STRING  CALL childindex.AddChild WITH NEW BaseIntermediateItem(U5xOutput.U5xPostBuildTime.MemAccJobEndNotification, ComputeMemAccJobEndNotification())  CALL childindex.AddChild WITH NEW BaseIntermediateItem(U5xOutput.U5xPostBuildTime.pAddrAreaConfig, ComputepSubAreaConfig(INDEX OF memAccAddressAreaConfiguration))  CALL childindex.AddChild WITH NEW BaseIntermediateItem(U5xOutput.U5xPostBuildTime.MemAccNumberofSubArea, ComputeMemAccNumberofSubArea(memAccAddressAreaConfiguration))  CALL childindex.AddChild WITH NEW BaseIntermediateItem(U5xOutput.U5xPostBuildTime.MemAccBufferAlignmentValue, ComputeMemAccBufferAlignmentValue())  CALL ret.AddChild WITH childindex  END FOR  RETURN ret | | |

{Ref: NA}

###### ComputeMemAccParamsOnOff

MEMACC\_TUD\_CLS\_004\_029:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccParamsOnOff | | |
| **Arguments** | None | | |
| **Return** | Desc: This method will be overrided in specified devices class | None | |
| Range: | null |
| **Generated Value** | None | | |
| **Description** | To compute value of 'OnOff' parameters  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### ComputepSubAreaConfig

MEMACC\_TUD\_CLS\_004\_030:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputepSubAreaConfig | | |
| **Arguments** | int index |  | |
| Range: | int |
| **Return** | Type: string | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute sub area config with input index.  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None  INITIALIZE result AS EMPTY STRING  SET result TO FORMAT(MemAccResources.ArrayMemAccSubArea, index)  RETURN result | | |

{Ref: N/A}

###### ComputeMemAccSubAreaLength

MEMACC\_TUD\_CLS\_004\_031:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccSubAreaLength | | |
| **Arguments** | None | | |
| **Return** | Type: stringInput | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute length of MemAcc sub area  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None   INITIALIZE result AS EMPTY STRING  INITIALIZE memAccSectorBatchRef AS Repo.GetReferenceValue WITH U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccSectorBatchRef  IF memAccSectorBatchRef IS NOT NULL  INITIALIZE memMaxReadSize AS Repo.GetParameterValue WITH U5xInput.MemMap.Mem, U5xInput.MemMap.MemEraseSectorSize  INITIALIZE memaccNumberOfSector AS Repo.GetParameterValue WITH U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccNumberOfSectors  SET result TO HEX FORMAT OF (memaccNumberOfSector.Value() \* memMaxReadSize.Value()) WITH "UL" SUFFIX  END IF  RETURN result | | |

{Ref: N/A}

###### ComputeMemAccNumberofSubArea

MEMACC\_TUD\_CLS\_004\_032:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccNumberofSubArea | | |
| **Arguments** | Container configSet | Input | |
| Range: | Container |
| **Return** | Type: string | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute number of MemAcc sub area  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None   INITIALIZE ret AS STRING  INITIALIZE memaccNumberofSubArea AS LIST FROM Repo.GetContainersByDefName WITH  U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccSubAddressAreaConfiguration  IF memaccNumberofSubArea HAS COUNT GREATER THAN 0  SET ret TO HEX FORMAT OF memaccNumberofSubArea COUNT WITH "UL" SUFFIX  ELSE  SET ret TO "0x00000000UL"  END IF  RETURN ret | | |

{Ref: N/A}

###### ComputeMemAccpPriority2AddrArea0

MEMACC\_TUD\_CLS\_004\_033:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccpPriority2AddrArea0 | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItemInput | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | To compute Priority to Address of Area0  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None   INITIALIZE pPriority2AddrArea0 AS Repo.GetParameterValue WITH  U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccHighestPriority VALUE  INITIALIZE array AS NEW ARRAY OF LONG WITH SIZE pPriority2AddrArea0 + 1  FOR i FROM 0 TO pPriority2AddrArea0 - 1  SET array[i] TO pPriority2AddrArea0 - i  END FOR  INITIALIZE Priority2Addr AS STRING JOIN OF array WITH ","  INITIALIZE ret AS NEW BaseIntermediateItem WITH U5xOutput.U5xPostBuildTime.pPriority2AddrAreaId, Priority2Addr  RETURN ret | | |

{Ref: N/A}

### MapName

#### UML

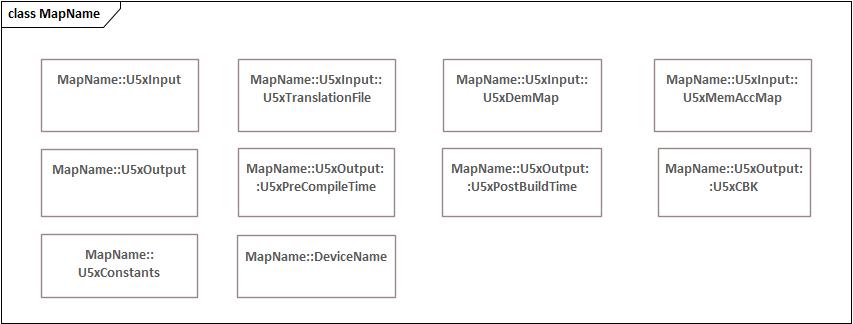


Figure 6: Common::MapName

MapName class contains module, container and parameter names of a MEMACC module.

#### Renesas::Generator::MemAccCommon::MapName::U5xInput

#### Renesas::Generator::MemAccCommon::MapName::U5xOutput

#### Renesas::Generator::MemAccCommon::MapName::U5xConstants

#### Renesas::Generator::MemAccCommon::MapName::DeviceName

### Utils

#### UML

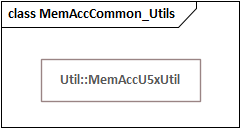


Figure 7: Common::Utils

This component provides API (methods) to support getting values for other classes to use.

#### Renesas::Generator::MemAccCommon::Utils::MemAccU5xUtils

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5xUtils.cs |
| **Description** | This file contains the common functions <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | intermediateData | Private | Create the interface to connect to IntermediateData. |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | CreateBasicParam | Public | This function to generate basic param, it is invoked by other functions |

##### Fields

###### intermediateData

MEMACC\_TUD\_CLS\_005\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |
| --- | --- |
| **Variable Name** | intermediateData |
| **Type** | IIntermediateData |
| **Range** | None |
| **Description** | Create the interface to connect to IntermediateData. |

##### Methods

###### CreateBasicParam

MEMACC\_TUD\_CLS\_005\_002:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CreateBasicParam | | |
| **Arguments** | string name | string | |
| Range: | N/A |
| string preComment | string | |
| Range: | N/A |
| string postComment | string | |
| Range: | N/A |
| string value | string | |
| Range: | N/A |
| bool enaMultiInstance | bool | |
| Range: | true/false |
| Dictionary< string, string > qacMessage | None | |
| Range: | None |
| **Return** | BaseGenerationItem Desc: Define | None | |
| Range: |  |
| **Generated Value** | None | | |
| **Description** | This function to generate basic param, it is invoked by other functions  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  Get value from Intermediate and output value to files   ALGORITHM:  IF value isn't null THEN  LET value = intermediateData CALL GetStringDataByPath with ("/name")  ELSE  IF value isn't null THEN  LET ret = DefineGenerationItem(  preComment,  postComment,  qacMessage  name,  value,  hasNameInstanceSetting: enaMultiInstance)  ELSE  RETURN ret | | |

{Ref: N/A}

### Validation

#### UML

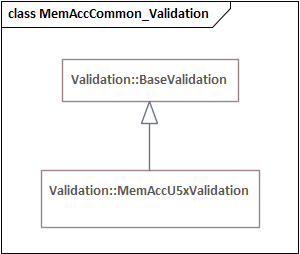


Figure 8: Common::Validation

MemAccU5xValidation class is inherited from BaseValidation class of Generic and contains common validation of MemAccU5Lx. This class contains validation methods to check whether parameter is valid or invalid (handle all error, warning, information for configuration)

#### Renesas::Generator::MemAccCommon::Validation::MemAccU5xValidation

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5xValidation.cs |
| **Description** | This class checks whether generated parameters is valid or invalid <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | MemAccU5xValidation | Protected | This is a default constructor for class MemAccU5xValidation |
| (2) | MemAccU5xValidation | Protected | This is a default constructor for MemAccU5xValidation |
| (3) | GetMandatoryParams | Protected | List Mandatory Params on specified devices when run application, This method will be overriden in specified devices class |
| (4) | GetMandatoryContainerList | Protected | List Mandatory container on specified devices when run application, This method will be overriden in specified devices class |
| (5) | CheckERR041004 | Protected | To check mandatory parameters from CDFs. |
| (6) | CheckERR041005 | Protected | To check error and gen ERR041005 message. |
| (7) | CheckERR041006 | Protected | To check error and gen ERR041006 message. |
| (8) | CheckERR041007 | Protected | To check error and gen ERR041007 message. |
| (9) | CheckERR041008 | Protected | To check error and gen ERR041008 message. |
| (10) | CheckERR041009 | Protected | To check error and gen ERR041009 message. |
| (11) | CheckERR041010 | Protected | To check error and gen ERR041010 message. |
| (12) | CheckERR041011 | Protected | To check error and gen ERR041011 message. |
| (13) | CheckINF041001 | Protected | To check error and gen INF041001 message. |

##### Fields

##### Methods

###### MemAccU5xValidation

MEMACC\_TUD\_CLS\_006\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |
| --- | --- |
| **Method Name** | MemAccU5xValidation |
| **Arguments** | None |
| **Return** | None |
| **Generated Value** | None |
| **Description** | This is a default constructor for class MemAccU5xValidation  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None |

{Ref: N/A}

###### MemAccU5xValidation

MEMACC\_TUD\_CLS\_006\_002:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | MemAccU5xValidation | | |
| **Arguments** | ILogger logger | Interface ILogger | |
| Range: | N/A |
| IUserInterface userInterface | Interface IUserInterface | |
| Range: | N/A |
| IRepository repository | Interface IRepository | |
| Range: | N/A |
| IBasicConfiguration basicConfiguration | Interface IBasicConfiguration | |
| Range: | N/A |
| IIntermediateData intermediateData | Interface IIntermediateData | |
| Range: | N/A |
| **Return** | None | | |
| **Generated Value** | None | | |
| **Description** | This is a default constructor for MemAccU5xValidation  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### GetMandatoryParams

MEMACC\_TUD\_CLS\_006\_003:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GetMandatoryParams | | |
| **Arguments** | None | | |
| **Return** | Type: Hashtable | None | |
| Range: | null |
| **Generated Value** | None | | |
| **Description** | List Mandatory Params on specified devices when run application, This method will be overriden in specified devices class  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### GetMandatoryContainerList

MEMACC\_TUD\_CLS\_006\_004:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GetMandatoryContainerList | | |
| **Arguments** | None | | |
| **Return** | Type: List<string> | None | |
| Range: | null |
| **Generated Value** | None | | |
| **Description** | List Mandatory container on specified devices when run application, This method will be overriden in specified devices class  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### CheckERR041004

MEMACC\_TUD\_CLS\_006\_005:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CheckERR041004 | | |
| **Arguments** | None | | |
| **Return** | Type: ValidationResult  Desc: ValidationResult contains result information of validation including code error, error message, module id, type, success, isError. | None | |
| Range: | Format: (type, number of messages) (SUCCESS, counter = 0) (ERROR, counter > 0) |
| **Generated Value** | None | | |
| **Description** | To check mandatory parameters from CDFs.  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  INITIALIZE ValidationResult result WITH ModuleId = BasicConfiguration.ModuleId, Code = 4  IF GetMandatoryParams() IS NOT NULL AND GetMandatoryContainerList() IS NOT NULL THEN  INITIALIZE List errorMessageList  errorMessageList = CALL CheckForMandatoryParameters WITH BasicConfiguration.ModuleName,  GetMandatoryParams(), GetMandatoryContainerList()  SET result.Message TO errorMessageList  IF errorMessageList.Count > 0 THEN  SET result.Type TO ERROR  ELSE  SET result.Type TO SUCCESS  END IF  ELSE  // Do nothing.  END IF  RETURN result | | |

{Ref: [1] MEMACC\_TAD\_ERR\_004}

###### CheckERR041005

MEMACC\_TUD\_CLS\_006\_006:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CheckERR041005 | | |
| **Arguments** | None | | |
| **Return** | Type: ValidationResult  Desc: ValidationResult contains result information of validation including code error, error message, module id, type, success, isError. | None | |
| Range: | Format: (type, number of messages) (SUCCESS, counter = 0) (ERROR, counter > 0) |
| **Generated Value** | None | | |
| **Description** | To check error and gen ERR041005 message.  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  INITIALIZE ValidationResult result WITH Type = SUCCESS, Code = 5, ModuleId = BasicConfiguration.ModuleId  INITIALIZE Container memGeneral WITH Repository.GetContainerByDefName  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccSubAddressAreaConfiguration)  INITIALIZE ItemValue memSectorBatchRef WITH Repository.GetReferenceValue  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccSectorBatchRef)  IF memSectorBatchRef IS NULL THEN  INITIALIZE Configuration config WITH Repository.GetConfiguration(BasicConfiguration.ModuleName)  IF config IS NOT NULL AND config.ShortName IS NOT EMPTY THEN  SET result.Type TO ERROR  ADD TO result.Message THE FORMATTED STRING MemAccResources.ERR041005 WITH  memGeneral.ShortName, Repository.GetCdfFileName(config.ShortName), memGeneral.Path  ELSE  Not required  END IF  ELSE  Not required  END IF  RETURN result | | |

{Ref: [1] MEMACC\_TAD\_ERR\_005}

###### CheckERR041006

MEMACC\_TUD\_CLS\_006\_007:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CheckERR041006 | | |
| **Arguments** | None | | |
| **Return** | Type: ValidationResult  Desc: ValidationResult contains result information of validation including code error, error message, module id, type, success, isError. | None | |
| Range: | Format: (type, number of messages) (SUCCESS, counter = 0) (ERROR, counter > 0) |
| **Generated Value** | None | | |
| **Description** | To check error and gen ERR041006 message.  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  INITIALIZE ValidationResult result WITH Type = SUCCESS, Code = 6, ModuleId = BasicConfiguration.ModuleId  INITIALIZE Container memaccGeneral WITH Repository.GetContainerByDefName  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccSubAddressAreaConfiguration)  INITIALIZE ItemValue memSectorBatchRef WITH Repository.GetReferenceValue  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccSectorBatchRef)  IF memSectorBatchRef IS NOT NULL THEN  IF U5xOutput.ErrorList.AbsolutePathRef IS NOT EQUAL TO memSectorBatchRef.Value() THEN  INITIALIZE Configuration config WITH Repository.GetConfiguration(BasicConfiguration.ModuleName)   IF config IS NOT NULL AND config.ShortName IS NOT EMPTY THEN  SET result.Type TO ERROR  ADD TO result.Message THE FORMATTED STRING MemAccResources.ERR041006 WITH memaccGeneral.ShortName,  Repository.GetCdfFileName(config.ShortName), memaccGeneral.Path  ELSE  Not required  END IF  END IF  ELSE  Not required  END IF   RETURN result | | |

{Ref: [1] MEMACC\_TAD\_ERR\_006}

###### CheckERR041007

MEMACC\_TUD\_CLS\_006\_008:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CheckERR041007 | | |
| **Arguments** | None | | |
| **Return** | Type: ValidationResult  Desc: ValidationResult contains result information of validation including code error, error message, module id, type, success, isError. | None | |
| Range: | Format: (type, number of messages) (SUCCESS, counter = 0) (ERROR, counter > 0) |
| **Generated Value** | None | | |
| **Description** | To check error and gen ERR041007 message.  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  INITIALIZE ValidationResult result WITH Type = SUCCESS, Code = 7, ModuleId = BasicConfiguration.ModuleId  INITIALIZE Container memaccGeneral WITH Repository.GetContainerByDefName  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccSubAddressAreaConfiguration)  INITIALIZE ItemValue memSectorBatchRef WITH Repository.GetReferenceValue  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccSectorBatchRef)  IF memSectorBatchRef IS NOT NULL THEN  INITIALIZE long memMinReadSize WITH Repository.GetParameterValue(U5xInput.MemMap.Mem, U5xInput.MemMap.MemMinReadSize).Value()  INITIALIZE long memaccBufferAlignmentValue WITH Repository.GetParameterValue  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccBufferAlignmentValue).Value()  INITIALIZE Configuration config WITH Repository.GetConfiguration(BasicConfiguration.ModuleName)   IF memaccBufferAlignmentValue MOD memMinReadSize IS NOT EQUAL TO 0 THEN  SET result.Type TO ERROR  ADD TO result.Message THE FORMATTED STRING MemAccResources.ERR041007 WITH  memaccGeneral.ShortName,  Repository.GetCdfFileName(config.ShortName),  memaccGeneral.Path  ELSE  Not required  END IF  ELSE  Not required  END IF  RETURN result | | |

{Ref: [1] MEMACC\_TAD\_ERR\_007}

###### CheckERR041008

MEMACC\_TUD\_CLS\_006\_009:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CheckERR041008 | | |
| **Arguments** | None | | |
| **Return** | Type: ValidationResult  Desc: ValidationResult contains result information of validation including code error, error message, module id, type, success, isError. | None | |
| Range: | Format: (type, number of messages) (SUCCESS, counter = 0) (ERROR, counter > 0) |
| **Generated Value** | None | | |
| **Description** | To check error and gen ERR041008 message.  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  INITIALIZE ValidationResult result WITH Type = SUCCESS, Code = 8, ModuleId = BasicConfiguration.ModuleId   INITIALIZE Container memaccGeneral WITH Repository.GetContainerByDefName  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccAddressAreaConfiguration)  INITIALIZE long priority WITH Repository.GetParameterValue(U5xInput.U5xMemAccMap.MemAcc,  U5xInput.U5xMemAccMap.MemAccAddressAreaPriority).Value()  INITIALIZE long highestpriority WITH Repository.GetParameterValue(U5xInput.U5xMemAccMap.MemAcc,  U5xInput.U5xMemAccMap.MemAccHighestPriority).Value()  INITIALIZE Configuration config WITH Repository.GetConfiguration(BasicConfiguration.ModuleName)  IF(highestpriority > 65535) OR(priority > 65535) OR((highestpriority > 65535) AND(priority > 65535)) THEN  SET result.Type TO ERROR  ADD TO result.Message THE FORMATTED STRING MemAccResources.ERR041008 WITH  memaccGeneral.ShortName, Repository.GetCdfFileName(config.ShortName), memaccGeneral.Path  ELSE  Not required  END IF RETURN result | | |

{Ref: [1] MEMACC\_TAD\_ERR\_008}

###### CheckERR041009

MEMACC\_TUD\_CLS\_006\_010:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CheckERR041009 | | |
| **Arguments** | None | | |
| **Return** | Type: ValidationResult  Desc: ValidationResult contains result information of validation including code error, error message, module id, type, success, isError. | None | |
| Range: | Format: (type, number of messages) (SUCCESS, counter = 0) (ERROR, counter > 0) |
| **Generated Value** | None | | |
| **Description** | To check error and gen ERR041009 message.  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  INITIALIZE ValidationResult result WITH Type = SUCCESS, Code = 9, ModuleId = BasicConfiguration.ModuleId   INITIALIZE Container memaccGeneral WITH Repository.GetContainerByDefName  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccAddressAreaConfiguration)  INITIALIZE long priority WITH Repository.GetParameterValue(U5xInput.U5xMemAccMap.MemAcc,  U5xInput.U5xMemAccMap.MemAccAddressAreaPriority).Value()  INITIALIZE long highestpriority WITH Repository.GetParameterValue(U5xInput.U5xMemAccMap.MemAcc,  U5xInput.U5xMemAccMap.MemAccHighestPriority).Value()  INITIALIZE Configuration config WITH Repository.GetConfiguration(BasicConfiguration.ModuleName)  IF highestpriority > priority THEN  SET result.Type TO ERROR  ADD TO result.Message THE FORMATTED STRING MemAccResources.ERR041009 WITH  memaccGeneral.ShortName, Repository.GetCdfFileName(config.ShortName), memaccGeneral.Path  ELSE  Not required  END IF  RETURN result | | |

{Ref: [1] MEMACC\_TAD\_ERR\_009}

###### CheckERR041010

MEMACC\_TUD\_CLS\_006\_011:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CheckERR041010 | | |
| **Arguments** | None | | |
| **Return** | Type: ValidationResult  Desc: ValidationResult contains result information of validation including code error, error message, module id, type, success, isError. | None | |
| Range: | Format: (type, number of messages) (SUCCESS, counter = 0) (ERROR, counter > 0) |
| **Generated Value** | None | | |
| **Description** | To check error and gen ERR041010 message.  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  INITIALIZE ValidationResult result WITH Type = SUCCESS, Code = 10, ModuleId = BasicConfiguration.ModuleId  INITIALIZE List invocationList WITH "MEMACC\_DIRECT\_STATIC", "MEMACC\_INDIRECT\_DYNAMIC", "MEMACC\_INDIRECT\_STATIC"  INITIALIZE Container memaccGeneral WITH Repository.GetContainerByDefName  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccAddressAreaConfiguration)  INITIALIZE string invocation WITH Repository.GetParameterValue(U5xInput.U5xMemAccMap.MemAcc,  U5xInput.U5xMemAccMap.MemAccMemInvocation).ToString()  INITIALIZE Configuration config WITH Repository.GetConfiguration(BasicConfiguration.ModuleName)  IF invocationList CONTAINS invocation THEN  SET result.Type TO ERROR  ADD TO result.Message THE FORMATTED STRING MemAccResources.ERR041010 WITH  memaccGeneral.ShortName, Repository.GetCdfFileName(config.ShortName), memaccGeneral.Path  ELSE  Not required  END IF  RETURN result | | |

{Ref: [1] MEMACC\_TAD\_ERR\_010}

###### CheckERR041011

MEMACC\_TUD\_CLS\_006\_012:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CheckERR041011 | | |
| **Arguments** | None | | |
| **Return** | Type: ValidationResult  Desc: ValidationResult contains result information of validation including code error, error message, module id, type, success, isError. | None | |
| Range: | Format: (type, number of messages) (SUCCESS, counter = 0) (ERROR, counter > 0) |
| **Generated Value** | None | | |
| **Description** | To check error and gen ERR041011 message.  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  INITIALIZE ValidationResult result WITH Type = SUCCESS, Code = 11, ModuleId = BasicConfiguration.ModuleId  INITIALIZE Container memaccGeneral WITH Repository.GetContainerByDefName  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccGeneral)  INITIALIZE bool functable WITH memaccGeneral.GetParameterValue  (U5xInput.U5xMemAccMap.MemAccUseMemFuncPtrTable).Value()  INITIALIZE ItemValue prefix WITH Repository.GetParameterValue  (U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAccMemNamePrefix)  INITIALIZE Configuration config WITH Repository.GetConfiguration(BasicConfiguration.ModuleName)  IF functable IS TRUE AND StringUtils.IsNullPointer(prefix.Value()) THEN  SET result.Type TO ERROR  ADD TO result.Message THE FORMATTED STRING MemAccResources.ERR041011 WITH  memaccGeneral.ShortName, Repository.GetCdfFileName(config.ShortName), memaccGeneral.Path  ELSE  Not required  END IF  RETURN result | | |

{Ref: [1] MEMACC\_TAD\_ERR\_011}

###### CheckINF041001

MEMACC\_TUD\_CLS\_006\_013:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | CheckINF041001 | | |
| **Arguments** | None | | |
| **Return** | Type: ValidationResult  Desc: ValidationResult contains result information of validation including code error, error message, module id, type, success, isError. | None | |
| Range: | Format: (type, number of messages) (SUCCESS, counter = 0) (ERROR, counter > 0) |
| **Generated Value** | None | | |
| **Description** | To check error and gen INF041001 message.  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION:  None  INITIALIZE ValidationResult result WITH  Type = ValidationResult.MessageType.SUCCESS,  Code = 1,  ModuleId = BasicConfiguration.ModuleId  LET support64bit WITH Repository.GetParameterValue(U5xInput.U5xMemAccMap.MemAcc, U5xInput.U5xMemAccMap.MemAcc64BitSupport).Value()  IF support64bit IS TRUE  LET config = Repository.GetConfiguration(BasicConfiguration.ModuleName)  SET result.Type = ValidationResult.MessageType.INFO  ADD TO result.Message THE FORMATTED STRING MemAccResources.INF041001, Repository.GetCdfFileName(config.ShortName)  END IF  RETURN result | | |

{Ref: [1] MEMACC\_TAD\_INF\_001}

## U5Lx

### Generation

#### UML

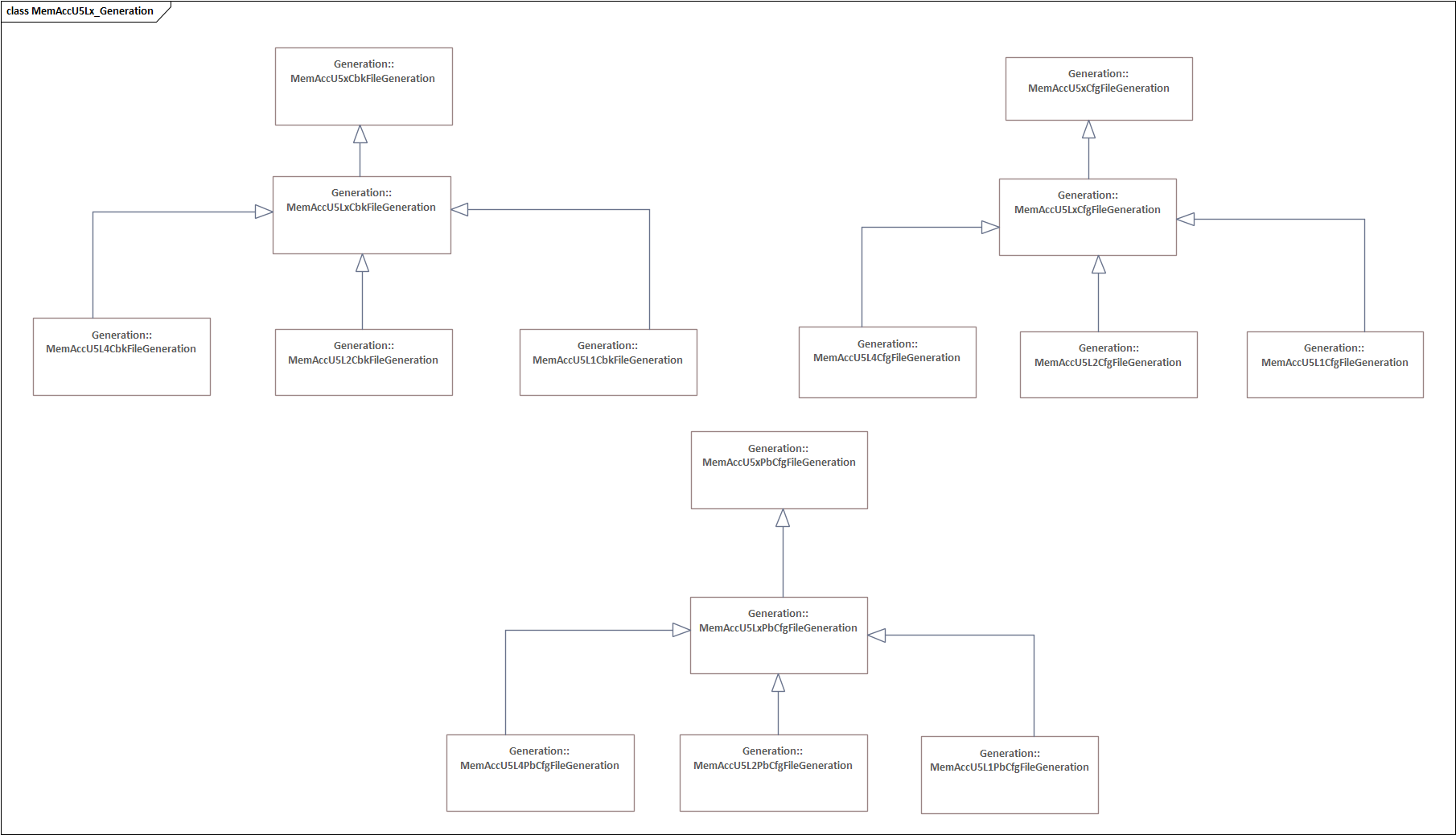


Figure 13: U5Lx::Generation

The class diagram describes relation among Generation classes of U5Lx family. MemAccU5LxCbkFileGeneration class is inherited from MemAccU5xCbkFileGeneration class.

MemAccU5LxCfgFileGeneration class is inherited from MemAccU5xCfgFileGeneration class.

MemAccU5LxPbCfgFileGeneration class is inherited from MemAccU5xPbCfgFileGeneration class.

MemAccU5LxCbkFileGeneration, MemAccU5LxPbCfgFileGeneration and MemAccU5LxCfgFileGeneration class contain common methods, common fields that use for all sub device as U5L4, U5L2, U5L1.

#### Renesas::Generator::MemAccU5Lx::Common::Generation::MemAccU5LxCbkFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5LxCbkFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cbk.h <class>FlsU5LxCbkFileGeneration</class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | GenMemAccVersionInfo | Protected | To generate version info |

##### Fields

##### Methods

###### GenMemAccVersionInfo

MEMACC\_TUD\_CLS\_007\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccVersionInfo | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: VERSION\_INFO  Desc: Version Information | None | |
| Range: | 4U, 9U, 0U, 1U, 0U |
| **Generated Value** | MEMACC\_CBK\_AR\_RELEASE\_MAJOR\_VERSION MEMACC\_CBK\_AR\_RELEASE\_MINOR\_VERSION MEMACC\_CBK\_AR\_RELEASE\_REVISION\_VERSION MEMACC\_CBK\_SW\_MAJOR\_VERSION MEMACC\_CBK\_SW\_MINOR\_VERSION | | |
| **Description** | To generate version info  Algorithm: GLOBAL VARIABLE IN:  List of ret of BaseGenerationItem. RANGE: array of BaseGenerationItem  GLOBAL VARIABLE OUT:  None  PRECONDITION:  (1) List of ret of BaseGenerationItem: never null or empty   LET param =new Dictionary<string,string>()  {  {  $"{moduleName}\_{Constant.CBK\_AR\_RELEASE\_MAJOR\_VERSION}",  MemAccResources.CBK\_AR\_RELEASE\_MAJOR\_VERSION\_PRE\_COMMENT},  { $"{moduleName}\_{Constant.CBK\_AR\_RELEASE\_MINOR\_VERSION}", String.Empty },  { $"{moduleName}\_{Constant.CBK\_AR\_RELEASE\_REVISION\_VERSION}", String.Empty },  {  $"{moduleName}\_{Constant.CBK\_SW\_MAJOR\_VERSION}",  MemAccResources.CBK\_SW\_MAJOR\_VERSION\_PRE\_COMMENT},  { $"{moduleName}\_{Constant.CBK\_SW\_MINOR\_VERSION}", String.Empty },  };  FOREACH item in root.Childs.Where(x => param.Keys.Contains(x.Name))  CALL items.Add(new DefineGenerationItem(param[item.Name], string.Empty,  new Dictionary<string, string>(), item.Name, item.Value));  RETURN items.ToArray() | | |

{Ref: [3] MEMACC\_DAD\_CFG\_012\_001, MEMACC\_DAD\_CFG\_012\_002, MEMACC\_DAD\_CFG\_012\_003, MEMACC\_DAD\_CFG\_012\_004, MEMACC\_DAD\_CFG\_012\_005}

#### Renesas::Generator::MemAccU5Lx::Common::Generation::MemAccU5LxCfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5LxCfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cfg.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | GenMemAccVersionInfo | Protected | To generate version info |
| (2) | GenMemAccCommonPublishedInfo | Protected | To generate common published info |

##### Fields

##### Methods

###### GenMemAccVersionInfo

MEMACC\_TUD\_CLS\_008\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccVersionInfo | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: VERSION\_INFO  Desc: Version Information | None | |
| Range: | 4U, 9U, 0U, 1U, 0U |
| **Generated Value** | MEMACC\_CFG\_AR\_RELEASE\_MAJOR\_VERSION MEMACC\_CFG\_AR\_RELEASE\_MINOR\_VERSION MEMACC\_CFG\_AR\_RELEASE\_REVISION\_VERSION MEMACC\_CFG\_SW\_MAJOR\_VERSION MEMACC\_CFG\_SW\_MINOR\_VERSION | | |
| **Description** | To generate version info  Algorithm: GLOBAL VARIABLE IN:  List of ret of BaseGenerationItem. RANGE: array of BaseGenerationItem  GLOBAL VARIABLE OUT:  None  PRECONDITION:  (1) List of ret of BaseGenerationItem: never null or empty  LET param =new Dictionary(string,string)  $"moduleName\_59\_RENESAS\_Constant.CFG\_AR\_RELEASE\_MAJOR\_VERSION",  Resources.CFG\_AR\_RELEASE\_MAJOR\_VERSION\_PRE\_COMMENT  $"moduleName\_59\_RENESAS\_Constant.CFG\_AR\_RELEASE\_MINOR\_VERSION}", String.Empty  $"moduleName\_59\_RENESAS\_Constant.CFG\_AR\_RELEASE\_REVISION\_VERSION}", String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.CFG\_SW\_MAJOR\_VERSION",  Resources.CFG\_SW\_MAJOR\_VERSION\_PRE\_COMMENT ,  $"moduleName\_59\_RENESAS\_Constant.CFG\_SW\_MINOR\_VERSION", String.Empty ,  FOREACH item in root.Childs.Where(x => param.Keys.Contains(x.Name))  CALL items.Add(new DefineGenerationItem(param[item.Name], string.Empty,  new Dictionary<string, string>(), item.Name, item.Value));  RETURN items.ToArray() | | |

{Ref: [3] MEMACC\_DAD\_CFG\_011\_001, MEMACC\_DAD\_CFG\_011\_002, MEMACC\_DAD\_CFG\_011\_003, MEMACC\_DAD\_CFG\_011\_004, MEMACC\_DAD\_CFG\_011\_005}

###### GenMemAccCommonPublishedInfo

MEMACC\_TUD\_CLS\_008\_002:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccCommonPublishedInfo | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: COMMON\_PUBLISHED\_INFO  Desc: | None | |
| Range: |  |
| **Generated Value** | MEMACC\_AR\_RELEASE\_MAJOR\_VERSION\_VALUE MEMACC\_AR\_RELEASE\_MINOR\_VERSION\_VALUE MEMACC\_AR\_RELEASE\_REVISION\_VERSION\_VALUE MEMACC\_SW\_MAJOR\_VERSION\_VALUE MEMACC\_SW\_MINOR\_VERSION\_VALUE MEMACC\_SW\_PATCH\_VERSION\_VALUE MEMACC\_VENDOR\_ID\_VALUE MEMACC\_MODULE\_ID\_VALUE | | |
| **Description** | To generate common published info  Algorithm: GLOBAL VARIABLE IN:  List of ret of BaseGenerationItem. RANGE: array of BaseGenerationItem   GLOBAL VARIABLE OUT:  ret   PRECONDITION:  (1) List of items of BaseGenerationItem: null or empty   LET param =new Dictionary(string,string)  $"moduleName\_Constant.CFG\_AR\_RELEASE\_MAJOR\_VERSION", String.Empty  $"moduleName\_Constant.CFG\_AR\_RELEASE\_MINOR\_VERSION", String.Empty  $"moduleName\_Constant.CFG\_AR\_RELEASE\_REVISION\_VERSION", String.Empty ,  $"moduleName\_Constant.SW\_MAJOR\_VERSION\_VALUE", String.Empty ,  $"moduleName\_Constant.SW\_MINOR\_VERSION\_VALUE", String.Empty ,  $"moduleName\_Constant.SW\_PATCH\_VERSION\_VALUE", String.Empty ,  $"moduleName\_Constant.VENDOR\_ID\_VALUE", String.Empty ,  $"moduleName\_Constant.MODULE\_ID\_VALUE", String.Empty ,  CALL items.Add CALL MemAccU5xUtils.CreateBasicParam  WITH String.Empty, param[item.Name], String.Empty, item.Value  FOREACH item in root.Childs.Where(x => param.Keys.Contains(x.Name))  CALL items.Add WITH CALL FlsU5xUtil.CreateBasicParam  WITH $"item.Name", param[item.Name], String.Empty, item.Value  RETURN items.ToArray() | | |

{Ref: [3] MEMACC\_DAD\_CFG\_001\_006, MEMACC\_DAD\_CFG\_001\_007, MEMACC\_DAD\_CFG\_001\_008, MEMACC\_DAD\_CFG\_001\_009, MEMACC\_DAD\_CFG\_001\_010, MEMACC\_DAD\_CFG\_001\_011, MEMACC\_DAD\_CFG\_001\_012, MEMACC\_DAD\_CFG\_001\_013}

#### Renesas::Generator::MemAccU5Lx::Common::Generation::MemAccU5LxPbCfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5LxPbCfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_PBcfg.c <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | GenMemAccVersionInfo | Protected | To generate version info |

##### Fields

##### Methods

###### GenMemAccVersionInfo

MEMACC\_TUD\_CLS\_009\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GenMemAccVersionInfo | | |
| **Arguments** | None | | |
| **Return** | Type: BaseGenerationItem[]  Section: VERSION\_INFO  Desc: Version Information | None | |
| Range: | 4U, 9U, 0U, 1U, 0U |
| **Generated Value** | MEMACC\_PBCFG\_C\_AR\_RELEASE\_MAJOR\_VERSION MEMACC\_PBCFG\_C\_AR\_RELEASE\_MINOR\_VERSION MEMACC\_PBCFG\_C\_AR\_RELEASE\_REVISION\_VERSION MEMACC\_PBCFG\_C\_SW\_MAJOR\_VERSION MEMACC\_PBCFG\_C\_SW\_MINOR\_VERSION | | |
| **Description** | To generate version info  Algorithm: GLOBAL VARIABLE IN:  List of ret of BaseGenerationItem. RANGE: array of BaseGenerationItem  GLOBAL VARIABLE OUT:  None  PRECONDITION:  (1) List of ret of BaseGenerationItem: never null or empty   LET param =new Dictionary(string,string)  $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_AR\_RELEASE\_MAJOR\_VERSION",  Resources.PBCFG\_C\_AR\_RELEASE\_MAJOR\_VERSION\_PRE\_COMMENT  $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_AR\_RELEASE\_MINOR\_VERSION", String.Empty  $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_AR\_RELEASE\_REVISION\_VERSION", String.Empty ,  $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_SW\_MAJOR\_VERSION",  Resources.PBCFG\_C\_SW\_MAJOR\_VERSION\_PRE\_COMMENT ,  $"moduleName\_59\_RENESAS\_Constant.PBCFG\_C\_SW\_MINOR\_VERSION", String.Empty ,  FOREACH item in root.Childs.Where(x => param.Keys.Contains(x.Name))  CALL items.Add WITH CALL MemAccU5xUtils.CreateBasicParam  WITH $"item.Name", param[item.Name], String.Empty, item.Value  RETURN items.ToArray() | | |

{Ref: [3] MEMACC\_DAD\_CFG\_008\_001, MEMACC\_DAD\_CFG\_008\_002, MEMACC\_DAD\_CFG\_008\_003, MEMACC\_DAD\_CFG\_008\_004, MEMACC\_DAD\_CFG\_008\_005}

#### Renesas::Generator::MemAccU5Lx::U5L1::Generation::MemAccU5L1CbkFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L1CbkFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cbk.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L1 Cbk FileGeneration instance used by ObjectFactory to get a new MemAccU5L1 Cbk FileGeneration object |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_012\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, -, U5L1]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5LxCbkFileGeneration |
| **Range** | None |
| **Description** | MemAccU5L1 Cbk FileGeneration instance used by ObjectFactory to get a new MemAccU5L1 Cbk FileGeneration object |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L1::Generation::MemAccU5L1CfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L1CfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cfg.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L1 Cfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L1 Cfg FileGeneration object |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_013\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, -, U5L1]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L1CfgFileGeneration |
| **Range** | None |
| **Description** | MemAccU5L1 Cfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L1 Cfg FileGeneration object |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L1::Generation::MemAccU5L1PbCfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L1PbCfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_PBcfg.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L1 PbCfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L1 PbCfg FileGeneration object |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_014\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, -, U5L1]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L1PbCfgFileGeneration |
| **Range** | None |
| **Description** | MemAccU5L1 PbCfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L1 PbCfg FileGeneration object |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L2::Generation::MemAccU5L2CbkFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L2CbkFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cbk.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L2 Cbk FileGeneration instance used by ObjectFactory to get a new MemAccU5L2 Cbk FileGeneration object |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_017\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, U5L2, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5LxCbkFileGeneration |
| **Range** | None |
| **Description** | MemAccU5L2 Cbk FileGeneration instance used by ObjectFactory to get a new MemAccU5L2 Cbk FileGeneration object |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L2::Generation::MemAccU5L2CfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L2CfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cfg.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L2 Cfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L2 Cfg FileGeneration object |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_018\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, U5L2, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L2CfgFileGeneration |
| **Range** | None |
| **Description** | MemAccU5L2 Cfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L2 Cfg FileGeneration object |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L2::Generation::MemAccU5L2PbCfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L2PbCfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_PBcfg.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L2 PbCfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L2 PbCfg FileGeneration object |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_019\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, U5L2, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L2PbCfgFileGeneration |
| **Range** | None |
| **Description** | MemAccU5L2 PbCfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L2 PbCfg FileGeneration object |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L4::Generation::MemAccU5L4CbkFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L4CbkFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cbk.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L4 Cbk FileGeneration instance used by ObjectFactory to get a new MemAccU5L4 Cbk FileGeneration object |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_022\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, -, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5LxCbkFileGeneration |
| **Range** | None |
| **Description** | MemAccU5L4 Cbk FileGeneration instance used by ObjectFactory to get a new MemAccU5L4 Cbk FileGeneration object |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L4::Generation::MemAccU5L4CfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L4CfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_Cfg.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L4 Cfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L4 Cfg FileGeneration object |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_023\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, -, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L4CfgFileGeneration |
| **Range** | None |
| **Description** | MemAccU5L4 Cfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L4 Cfg FileGeneration object |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L4::Generation::MemAccU5L4PbCfgFileGeneration

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L4PbCfgFileGeneration.cs |
| **Description** | This file contains the functions to fill the output file MemAcc\_PBcfg.h <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L4 PbCfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L4 PbCfg FileGeneration object |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_024\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, -, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L4PbCfgFileGeneration |
| **Range** | None |
| **Description** | MemAccU5L4 PbCfg FileGeneration instance used by ObjectFactory to get a new MemAccU5L4 PbCfg FileGeneration object |

##### Methods

### Intermediate

#### UML

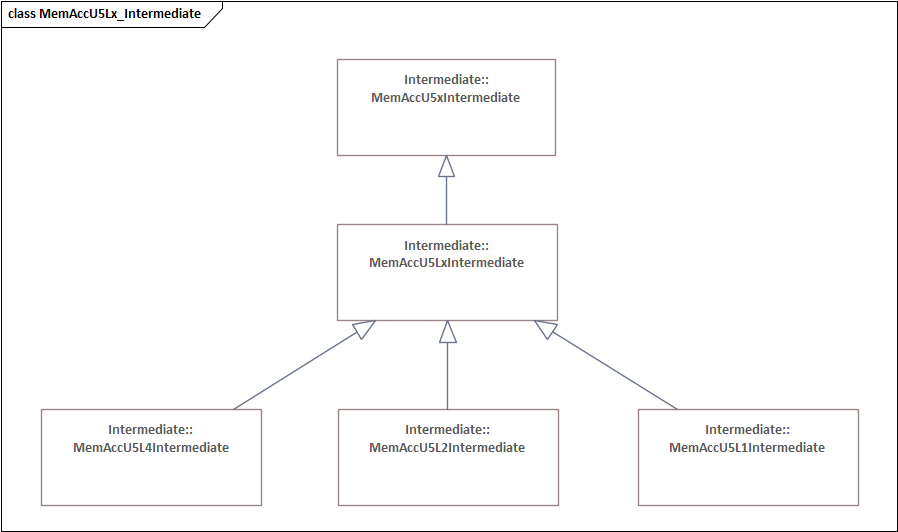


Figure 14: U5Lx::Intermediate

The class diagram describes relation among Intermediate class of U5Lx family. MemAccU5LxIntermediate class is inherited from MemAccU5xIntermediate class.

MemAccU5L4Intermediate, MemAccU5L2Intermediate, MemAccU5L1Intermediate class are inherited from MemAccU5LxIntermediate class.

MemAccU5LxIntermediate class contains common methods, common fields that use for all sub device as U5L4, U5L2, U5L1.

#### Renesas::Generator::MemAccU5Lx::Common::Intermediate::MemAccU5LxIntermediate

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5LxIntermediate.cs |
| **Description** | This file calculates value of parameters that is used to output header and source file <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | ComputeMemAccParamsOnOff | Protected | To compute value of parameters are STD\_ON or STD\_OFF |

##### Fields

##### Methods

###### ComputeMemAccParamsOnOff

MEMACC\_TUD\_CLS\_010\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | ComputeMemAccParamsOnOff | | |
| **Arguments** | None | | |
| **Return** | Type: BaseIntermediateItem  Desc: Return value of parameters are STD\_ON or STD\_OFF | None | |
| Range: | STD\_ON/STD\_OFF |
| **Generated Value** | None | | |
| **Description** | To compute value of parameters are STD\_ON or STD\_OFF  Algorithm: GLOBAL VARIABLE IN:  None  GLOBAL VARIABLE OUT:  None  PRECONDITION :  None  $"(valueBlankAreaOffSet)UL"  RETURN CALL Repo.ComputeOnOffParams WITH onOffParamsGroup | | |

{Ref: [3] MEMACC\_DAD\_CFG\_003\_001, MEMACC\_DAD\_CFG\_003\_002, MEMACC\_DAD\_CFG\_003\_003, MEMACC\_DAD\_CFG\_003\_004, MEMACC\_DAD\_CFG\_003\_005, MEMACC\_DAD\_CFG\_003\_006, MEMACC\_DAD\_CFG\_003\_007, MEMACC\_DAD\_CFG\_003\_008, MEMACC\_DAD\_CFG\_003\_009, MEMACC\_DAD\_CFG\_003\_010, MEMACC\_DAD\_CFG\_003\_011, MEMACC\_DAD\_CFG\_003\_012,}

#### Renesas::Generator::MemAccU5Lx::U5L1::Intermediate::MemAccU5L1Intermediate

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L1Intermediate.cs |
| **Description** | This file calculate value of parameters that is used to output header and source file <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L1 Intermediate |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_015\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, -, U5L1]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L1Intermediate |
| **Range** | None |
| **Description** | MemAccU5L1 Intermediate |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L2::Intermediate::MemAccU5L2Intermediate

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L2Intermediate.cs |
| **Description** | This file calculate value of parameters that is used to output header and source file <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L2 Intermediate |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_020\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, U5L2, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L2Intermediate |
| **Range** | None |
| **Description** | MemAccU5L2 Intermediate |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L4::Intermediate::MemAccU5L4Intermediate

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L4Intermediate.cs |
| **Description** | This file calculate value of parameters that is used to output header and source file <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAccU5L4 Intermediate |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_025\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, -, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L4Intermediate |
| **Range** | None |
| **Description** | MemAccU5L4 Intermediate |

##### Methods

### MapName

#### UML

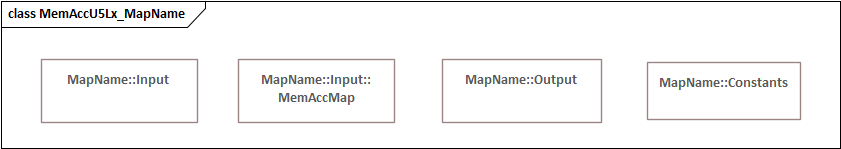


Figure 15: U5Lx::MapName

MapName class contains module, container and parameter names of a MEMACC module.

#### Renesas::Generator::MemAccU5Lx::Common::MapName::Input

#### Renesas::Generator::MemAccU5Lx::Common::MapName::Output

#### Renesas::Generator::MemAccU5Lx::Common::MapName::Constants

### Validation

#### UML

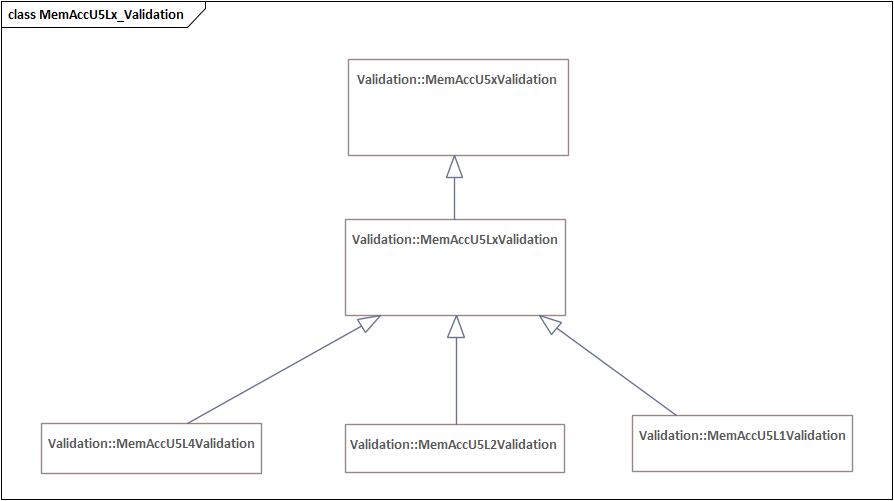


Figure 16: U5Lx::Validation

MemAccU5L4Validation, MemAccU5L2Validation, MemAccU5L1Validation classes are inherited from MemAccU5LxValidation class.

MemAccU5LxValidation class is inherited from MemAccU5xValidation.

MemAccU5LxCfgFileGeneration class contain common methods, common fields that use for all sub device as U5L4, U5L2, U5L1.

#### Renesas::Generator::MemAccU5Lx::Common::Validation::MemAccU5LxValidation

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5LxValidation.cs |
| **Description** | This file check whether parameter is valid or invalid <class>FlsU5LxValidation</class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| - | - | - | - |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| (1) | MemAccU5LxValidation | Protected | This is a default constructor for U5Lx MemAccU5LxValidation |
| (2) | MemAccU5LxValidation | Protected | This is a constructor for U5Lx MemAccU5LxCfgFileGeneration that take 6 arguments Input |
| (3) | GetMandatoryParams | Protected | List Mandatory Params on U5x devices when run application |
| (4) | GetMandatoryContainerList | Protected | List Mandatory Params on U5x devices when run application |

##### Fields

##### Methods

###### MemAccU5LxValidation

MEMACC\_TUD\_CLS\_011\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |
| --- | --- |
| **Method Name** | MemAccU5LxValidation |
| **Arguments** | None |
| **Return** | None |
| **Generated Value** | None |
| **Description** | This is a default constructor for U5Lx MemAccU5LxValidation  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None |

{Ref: N/A}

###### MemAccU5LxValidation

MEMACC\_TUD\_CLS\_011\_002:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | MemAccU5LxValidation | | |
| **Arguments** | ILogger logger | Input | |
| Range: | Interface IUserInterface |
| IUserInterface userInterface | Input | |
| Range: | Interface ILogger |
| IRepository repository | Input | |
| Range: | Interface IBasicConfiguration |
| IBasicConfiguration basicConfiguration | Input | |
| Range: | Interface IRepository |
| IIntermediateData intermediateData | Input | |
| Range: | Interface IIntermediateData |
| **Return** | None | | |
| **Generated Value** | None | | |
| **Description** | This is a constructor for U5Lx MemAccU5LxCfgFileGeneration that take 6 arguments Input  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None | | |

{Ref: N/A}

###### GetMandatoryParams

MEMACC\_TUD\_CLS\_011\_003:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GetMandatoryParams | | |
| **Arguments** | None | | |
| **Return** | Type: Hashtable  Desc: return table of mandatory params | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | List Mandatory Params on U5x devices when run application  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None  ALGORITHM:  return table of MemAccDeviceName, MemAccDevErrorDetect, MemAccNumberOfTestedCellsAtomic,  MemAccJobEndNotificationSupported, MemAccTestIntervalIdEndValue,  MemAccTestResultSignature, MemAccVersionCheckExternalModules, MemAccCriticalSectionProtection,  MemAccAlreadyInitDetCheck, MemAccCFECCBankTestStartAddress, MemAccCrcBgndKcrcnUnit,  MemAccCrcFgndKcrcnUnit, MemAccMainFunctionPeriod,  MemAccTestEccCFBank, MemAccJobEndNotification,  MemAccBlockBaseAddress, MemAccBgndBlockIndex, MemAccBlockSize, MemAccSignatureAddress,  MemAccTestAlgorithm, MemAccAddressDependentCRC, MemAccMemoryType, MemAccBlockBaseAddress,  MemAccFgndBlockIndex, MemAccBlockSize, MemAccSignatureAddress, MemAccTestAlgorithm,  MemAccAddressDependentCRC, MemAccMemoryType, MemAccGetCurrentStateApi, MemAccGetErrorDetailsApi,  MemAccGetTestResultBgndApi, MemAccGetTestResultFgndApi, MemAccGetTestSignatureBgndApi,  MemAccGetTestSignatureFgndApi, MemAccStartFgndApi, MemAccSuspendResumeApi,  MemAccVersionInfoApi, MemAccTestEccApi | | |

{Ref: N/A}

###### GetMandatoryContainerList

MEMACC\_TUD\_CLS\_011\_004:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

|  |  |  |  |
| --- | --- | --- | --- |
| **Method Name** | GetMandatoryContainerList | | |
| **Arguments** | None | | |
| **Return** | Type: List<string>  Desc: return table of mandatory params | None | |
| Range: | N/A |
| **Generated Value** | None | | |
| **Description** | List Mandatory Params on U5x devices when run application  Algorithm: GLOBAL VARIABLE IN:  None   GLOBAL VARIABLE OUT:  None   PRECONDITION:  None  ALGORITHM:  return table of MemAccConfigSet, MemAccConfigurationOfOptApiServices, MemAccGeneral | | |

{Ref: N/A}

#### Renesas::Generator::MemAccU5Lx::U5L1::Validation::MemAccU5L1Validation

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L1Validation.cs |
| **Description** | This file check whether parameter is valid or invalid <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAcc U5L1 |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_016\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, -, U5L1]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L1Validation |
| **Range** | None |
| **Description** | MemAcc U5L1 |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L2::Validation::MemAccU5L2Validation

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L2Validation.cs |
| **Description** | This file check whether parameter is valid or invalid <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAcc U5L2 |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_021\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: -, U5L2, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L2Validation |
| **Range** | None |
| **Description** | MemAcc U5L2 |

##### Methods

#### Renesas::Generator::MemAccU5Lx::U5L4::Validation::MemAccU5L4Validation

|  |  |
| --- | --- |
| **Location File Name** | MemAccU5L4Validation.cs |
| **Description** | This file check whether parameter is valid or invalid <class> |

1. Field List

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Name** | **Type** | **Description** |
| (1) | Instance | Public | MemAcc U5L4 |

1. Method List

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Name** | **Type** | **Description** |
| - | - | - | - |

##### Fields

###### Instance

MEMACC\_TUD\_CLS\_026\_001:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, -, -]*

|  |  |
| --- | --- |
| **Variable Name** | Instance |
| **Type** | readonly MemAccU5L4Validation |
| **Range** | None |
| **Description** | MemAcc U5L4 |

##### Methods

# Error, Warning and Information Messages

This section contains the list of errors, warning and information messages that will be generated by the MEMACC Generation Tool. The messages will help to identify the syntax or semantic errors in the ECU Configuration Description File(s). Hence it will ensure validity and correctness of the information available in the ECU Configuration Description File(s).

The detail of error, warning and information messages are described at [2]. Please refer this document.

# Uncovered List

MEMACC\_TUD\_UNCOVERED:  
Dev: U5L4, U5L2, U5L1  
*[Attr: U5L4, U5L2, U5L1]*

| Document name | Uncovered IDs | Reason |
| --- | --- | --- |
| R-Car\_U5x\_MEMACC\_GenTool\_ErrorList.xlsx | MEMACC\_TOOL\_UNCOVERED\_001 | Uncovered List ID of AD Gentool |