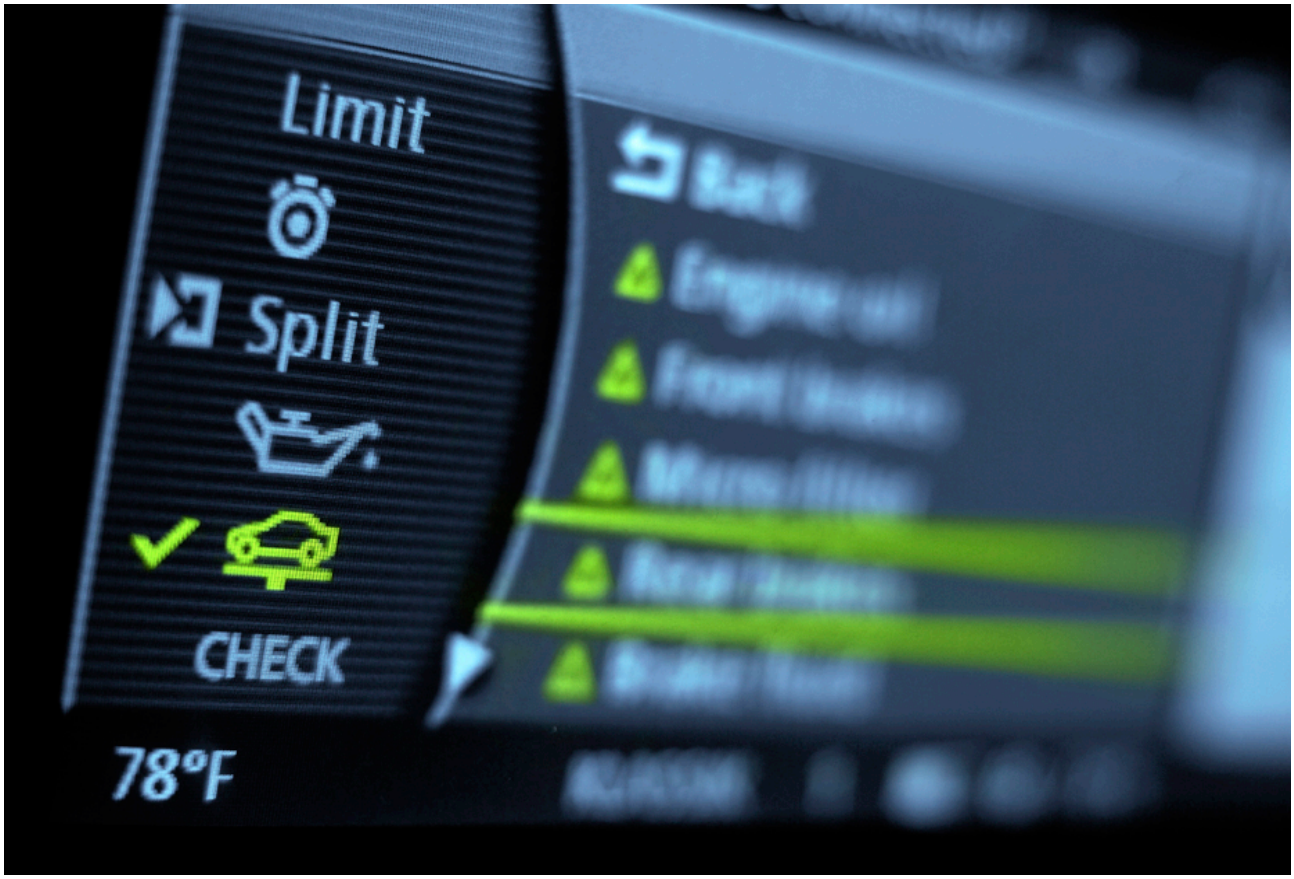
Elektrobit

EB tresos® AutoCore Generic 8 Memory Stack documentation

release notes update for the MemAcc module

product release 8.8.7



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1. Overview

This document provides you with the release notes to accompany an update to the `MemAcc` module. Refer to the changelog Section 2.1, “Change log” for details of changes made for this update.

Release notes details

- EB tresos AutoCore release version: 8.8.7
- EB tresos Studio release version: 29.2.0
- AUTOSAR R4.0 Rev 3
- Build number: B577598

2. MemAcc module release notes

- AUTOSAR R4.0 Rev 3
- AUTOSAR SWS document version: 4.5.0
- Module version: 1.0.3.B577598
- Supplier: Elektrobit Automotive GmbH

2.1. Change log

This chapter lists the changes between different versions.

Module version 1.0.3

2022-11-14

- Internal module improvement. This module version update does not affect module functionality.

Module version 1.0.2

2022-10-26

- Update MemAcc in preparation for 22-11 changes.

Module version 1.0.1

2022-07-04

- Internal module improvement. This module version update does not affect module functionality.
- Improved quality for MemAcc as RFD.

Module version 1.0.0

2022-04-11

- First MemAcc prototype release.

2.2. New features

- No new features have been added since the last release.

2.3. Elektrobit-specific enhancements

This chapter lists the enhancements provided by the module.

- This module provides no Elektrobit-specific enhancements.

2.4. Deviations

This chapter lists the deviations of the module from the AUTOSAR standard.

- Variant Post Build

  Affected AUTOSAR releases:

  - R21-11

  Description:

  Variant Post Build is not supported for any of the configuration parameters.

  Rationale:

  Requirements:

  AUTOSAR Release 21-11: MemAcc.ECUC_MemAcc_00010, MemAcc.ECUC_MemAcc_00012, MemAcc.ECUC_MemAcc_00013, MemAcc.ECUC_MemAcc_00014, MemAcc.ECUC_MemAcc_00015, MemAcc.ECUC_MemAcc_00016, MemAcc.ECUC_MemAcc_00018, MemAcc.ECUC_MemAcc_00019, MemAcc.ECUC_MemAcc_00020, MemAcc.ECUC_MemAcc_00021, MemAcc.ECUC_MemAcc_00022, MemAcc.ECUC_MemAcc_00023

- MemAcc_JobInfoType

  Affected AUTOSAR releases:

  - R21-11

  Description:

Name MemAcc_JobInfoType (draft) Kind Structure Elements LogicalAddress Type MemAcc_AddressType Comment Address of currently active address area request Length Type MemAcc_LengthType Comment Length of the currently active address area request HwId Type MemAcc_HwIdType Comment Referenced memory driver hardware identifier MemInstanceId Type uint32 Comment Instance ID of the current memory request MemAddress Type MemAcc_AddressType Comment Physical address of the current memory driver request MemLength Type MemAcc_LengthType Comment Length of memory driver request CurrentJob Type MemAcc_JobType Comment Currently active MemAcc job MemResult Type Mem_JobResultType Comment Current or last Mem driver result

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_10013

- MemAccJobEndNotification

Affected AUTOSAR releases:

- R21-11

Description:

If a new job is triggered for an area between job finished by lower layer and job end notification function is called by MemAcc, the notification will not be triggered for the previous(just completed) job

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_00015

- MemAcc_MemReadFuncType

Affected AUTOSAR releases:

- R21-11

Description:

Name MemAcc_MemReadFuncType Kind Function Pointer Syntax Std_ReturnType (*MemAcc_MemReadFuncType) (MemAcc_MemInstanceIdType instanceId, MemAcc_MemAddressType sourceAddress, MemAcc_MemDataType* destinationDataPtr, MemAcc_MemLengthType length) Parameters (in) instanceId ID of the related memory driver instance. sourceAddress Physical address to read data from. length Read length in bytes. Parameters (inout) None Parameters (out) destinationDataPtr Destination memory pointer to store the read data. Return value Std_ReturnType E_OK: The requested job has been

accepted by the module. E_NOT_OK: The requested job has not been accepted by the module. E_-MEM_SERVICE_NOT_AVAIL: The service function is not implemented. Description Function pointer for the Mem_Read service for the invocation of the Mem driver API via function pointer interface. Tags: atp.-Status=draft Available via MemAcc.h Tags: atp.Status=draft Available via MemAcc.h

Rationale:

Order of parameters is not consistent in SWS with the ones in the Read API

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_91003

- MemAcc_MemWriteFuncType

Affected AUTOSAR releases:

- R21-11

Description:

Name MemAcc_MemWriteFuncType Kind Function Pointer Syntax Std_ReturnType (*MemAcc_-MemWriteFuncType) (MemAcc_MemInstanceIdType instanceId, MemAcc_MemAddressType targetAd-dress, const MemAcc_MemDataType* sourceDataPtr, MemAcc_MemLengthType length) Parameters (in) instanceId ID of the related memory driver instance. targetAddress Physical write address (aligned to page size). sourceDataPtr Source data pointer (aligned to page size). length Write length in bytes (aligned to page size). Parameters (inout) None Parameters (out) None Return value Std_ReturnType E_OK: The requested job has been accepted by the module. E_NOT_OK: The requested job has not been accept-ed by the module. E_MEM_SERVICE_NOT_AVAIL: The service function is not implemented. Description Function pointer for the Mem_Write service for the invocation of the Mem driver API via function pointer interface. Tags: atp.Status=draft Available via MemAcc.h

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_91004

- MemAcc_MemEraseFuncType

Affected AUTOSAR releases:

- R21-11

Description:

Name MemAcc_MemEraseFuncType Kind Function Pointer Syntax Std_ReturnType (*MemAcc_-MemEraseFuncType) (MemAcc_MemInstanceIdType instanceId, MemAcc_MemAddressType targetAd-

dress, MemAcc_MemLengthType length) Parameters (in) instanceId ID of the related memory driver instance. targetAddress Physical erase address (aligned to sector size). length Erase length in bytes (aligned to sector size). Parameters (inout) None Parameters (out) None Return value Std_ReturnType E_OK: The requested job has been accepted by the module. E_NOT_OK: The requested job has not been accepted by the module. E_MEM_SERVICE_NOT_AVAIL: The service function is not implemented. Description Function pointer for the Mem_Write service for the invocation of the Mem driver API via function pointer interface. Tags: atp.Status=draft Available via MemAcc.h

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_91005

- MemAcc_MemBlankCheckFuncType

Affected AUTOSAR releases:

- R21-11

Description:

Name MemAcc_MemBlankCheckFuncType Kind Function Pointer Syntax Std_ReturnType (*MemAcc_MemBlankCheckFuncType) (MemAcc_MemInstanceIdType instanceId, MemAcc_MemAddressType targetAddress, MemAcc_MemLengthType length) Parameters (in) instanceId ID of the related memory driver instance. targetAddress Physical blank check address. length Blank check length. Parameters (inout) None Parameters (out) None Return value Std_ReturnType E_OK: The requested job has been accepted by the module. E_NOT_OK: The requested job has not been accepted by the module. E_MEM_SERVICE_NOT_AVAIL: The service function is not implemented. Description Function pointer for the Mem_HwSpecificService function for the invocation of the Mem driver API via function pointer interface. Tags: atp.Status=draft Available via MemAcc.h Available via MemAcc.h

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_91007

- MemAcc_MemHwSpecificServiceFuncType

Affected AUTOSAR releases:

- R21-11

Description:

Name MemAcc_MemHwSpecificServiceFuncType Kind Function Pointer Syntax void (*MemAcc_-MemHwSpecificServiceFuncType) (Std_ReturnType return, MemAcc_MemInstanceIdType instanceId, MemAcc_MemHwServiceIdType hwServiceId, MemAcc_MemDataType* dataPtr, MemAcc_Mem-LengthType* lengthPtr) Parameters (in) instanceId ID of the related memory driver instance. hwServiceId Hardware specific service request identifier for dispatching the request. lengthPtr Size pointer of the passed data. Parameters (inout) dataPtr Request specific data pointer. lengthPtr Size pointer of the passed data. Parameters (out) None Return value Std_ReturnType E_OK: The requested job has been accepted by the module. E_NOT_OK: The requested job has not been accepted by the module. E_MEM_SERVICE_NOT_-AVAIL: The service function is not implemented. Description Function pointer for the Mem_BlankCheck service for the invocation of the Mem driver API via function pointer interface. Tags: atp.Status=draft Available via MemAcc.h

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_91010,MemAcc.SWS_MemAcc_00067

- MemAcc_ActivateMem

Affected AUTOSAR releases:

- R21-11

Description:

MemAcc_ActivateMem and MemAcc_DeactivateMem are not supported.

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_10033, MemAcc.SWS_MemAcc_00121, MemAcc.-SWS_MemAcc_00088, MemAcc.SWS_MemAcc_00089, MemAcc.SWS_MemAcc_10034, MemAcc.-SWS_MemAcc_00122, MemAcc.SWS_MemAcc_00090, MemAcc.SWS_MemAcc_00123

- Mem_Suspend/Mem_Resume

Affected AUTOSAR releases:

- R21-11

Description:

Suspend/Resume functionality is not supported yet.

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.Prioritization.SuspendResume

- INDIRECT_DYNAMIC/INDIRECT_STATIC

Affected AUTOSAR releases:

- R21-11

Description:

The current MemAcc implementation doesn't support "INDIRECT_DYNAMIC" and "INDIRECT_STATIC" invocation types.

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.Driver.IndirectStatic.MainFunction, MemAcc.Driver.IndirectDynamic.MainFunction, MemAcc.SWS_MemAcc_10038, MemAcc.SWS_MemAcc_00085, MemAcc.ECUC_MemAcc_00007, MemAcc.SWS_MemAcc_00111, MemAcc.SWS_MemAcc_91001, MemAcc.SWS_MemAcc_10014, MemAcc.SWS_MemAcc_91013, MemAcc.SWS_MemAcc_91012, MemAcc.SWS_MemAcc_91020, MemAcc.SWS_MemAcc_91016, MemAcc.SWS_MemAcc_91014, MemAcc.SWS_MemAcc_91000, MemAcc.SWS_MemAcc_91018, MemAcc.SWS_MemAcc_91002, MemAcc.SWS_MemAcc_91008, MemAcc.SWS_MemAcc_91009, MemAcc.SWS_MemAcc_91006, MemAcc.SWS_MemAcc_00025

- 64 Bit Support

Affected AUTOSAR releases:

- R21-11

Description:

The MemAcc module doesn't support address areas larger than 4GBytes

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_00081, MemAcc.SWS_MemAcc_00082

- Memory Lock

Affected AUTOSAR releases:

- R21-11

Description:

MemAcc_RequestLock and MemAcc_ReleaseLock are not supported.

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_10030, MemAcc.SWS_MemAcc_00115, MemAcc.SWS_MemAcc_00116, MemAcc.SWS_MemAcc_00099, MemAcc.SWS_MemAcc_00071, MemAcc.SWS_MemAcc_00072, MemAcc.SWS_MemAcc_00073, MemAcc.SWS_MemAcc_10031, MemAcc.SWS_MemAcc_00076, MemAcc.SWS_MemAcc_00093, MemAcc.SWS_MemAcc_00077 ,MemAcc.SWS_MemAcc_10032

- MemAcc_HwSpecificService

Affected AUTOSAR releases:

- R21-11

Description:

MemAcc_HwSpecificService API is not supported.

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_00066, MemAcc.SWS_MemAcc_00068 ,MemAcc.SWS_MemAcc_00070 ,MemAcc.SWS_MemAcc_10028

- Address Alignment

Affected AUTOSAR releases:

- R21-11

Description:

Alignment check is not supported, MemAcc expects the requests to be aligned.

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_00004

- ECC Support

Affected AUTOSAR releases:

- R21-11

Description:

Error Correction Code (ECC) is not supported.

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_0107, MemAcc.SWS_MemAcc_00108

- MemAcc_GetJobResult

Affected AUTOSAR releases:

- R21-11

Description:

The service MemAcc_GetJobResult shall return the consolidated result of the last MemAcc job. Note: If a MemAcc job is still pending, the API returns the intial job result "MEMACC_MEM_OK"

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_00092

- MemAccReadBurstUsage

Affected AUTOSAR releases:

- R21-11

Description:

If enabled by MemAccUseReadBurst, MemAcc shall align and split the Mem driver read/blankcheck requests up to the read burst size of the Mem driver.

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_00101

- MemAcc_DeInit

Affected AUTOSAR releases:

- R21-11

Description:

MemAcc_DeInit is not implemented yet.

Rationale:

Requirements:

AUTOSAR Release 21-11: MemAcc.SWS_MemAcc_10041

2.5. Limitations

This chapter lists the limitations of the module. Refer to the module references chapter *Integration notes*, subsection *Integration requirements* for requirements on integrating this module.

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2.6. Open-source software

The software that is delivered with EB tresos AutoCore Generic can be classified into the following two categories:

- Software that is executed on the electronic control unit (ECU).
- Software that is used for the development infrastructure (configuration, generation, building) and thus executed on the development platform.

2.6.1. Open-source software in software executed on the ECU

The following list of open-source software that runs on the ECU is delivered with MODULENAME:

- EXACT_NAME of open-source item
  EXACT_VERSION of open-source item
  LINK to homepage of the open-source item

  List of licenses:

  - EXACT_LICENSE_NAME_WITH_LICENSE_VERSION
    EXACT_NAME_OF_LICENSE_FILE (as stored in the folder mentioned above)

  List of copyrights:

  - EXACT_COPYRIGHT

2.6.2. Open-source software in software used for the development infrastructure

The following list of open-source software that is used in development is delivered with MODULENAME:

- EXACT_NAME of open-source item
  EXACT_VERSION of open-source item
  LINK to homepage of the open-source item

  List of licenses:

  - EXACT_LICENSE_NAME_WITH_LICENSE_VERSION
    EXACT_NAME_OF_LICENSE_FILE (as stored in the folder mentioned above)

  List of copyrights:

  - EXACT_COPYRIGHT