Automotive & Embedded Info

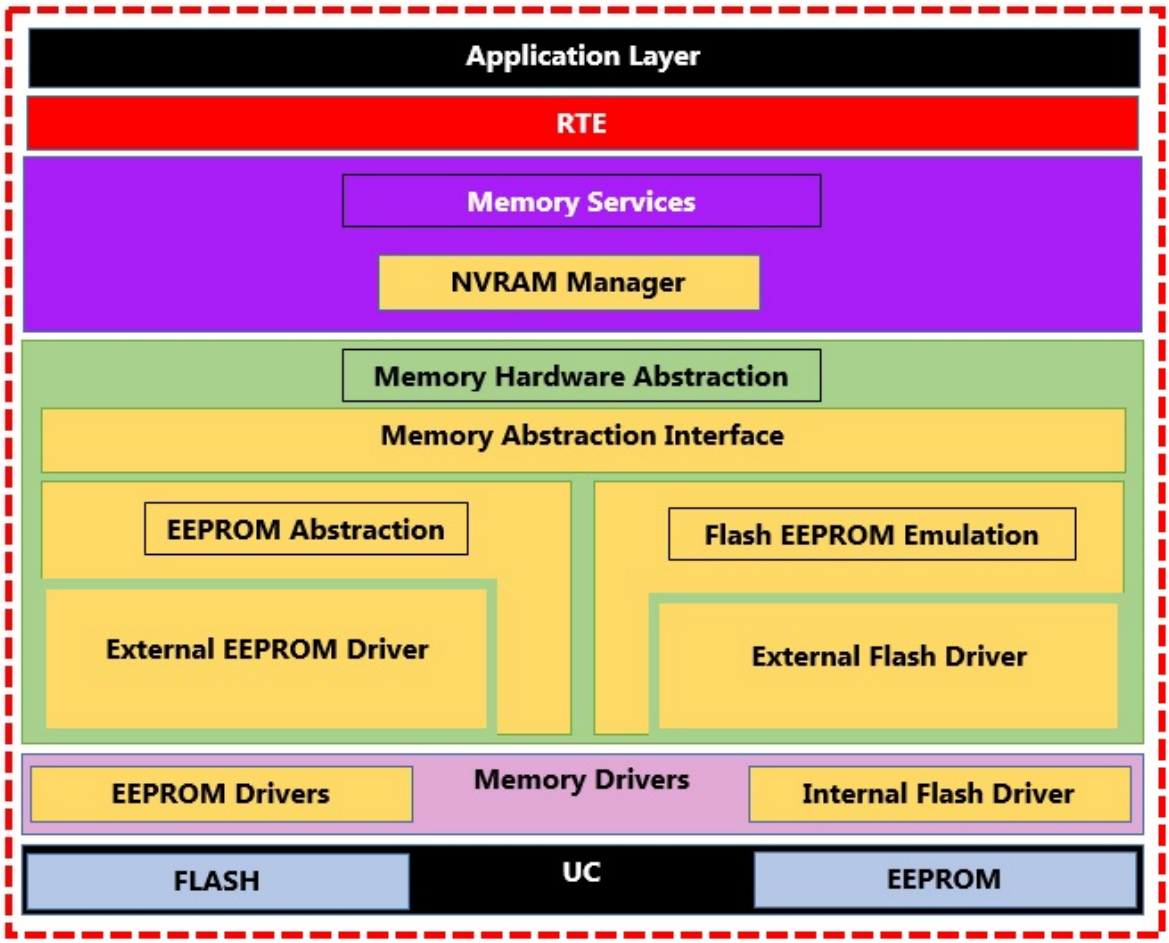
Never Forget Basics Whether its Life or Anything Else ... Basics are Cores. While seeing a Tree how can we forget Seed...

Memory Stack

Memory Stack (MemStack) provides basic memory management services to the upper Application layer and to the Basic Software Modules (BSW) of the AUTOSAR layered architecture.

The memory management services ensure access to the memory cluster, to the devices or software functions, for reading and writing data to non-volatile memory media like Flash or EEPROM

The following block diagram show various software modules and device drivers associated with AUTOSAR Memory Stack:



Description of AUTOSAR Memory Stack software modules:

Non-Volatile Memory Manager (NvM): The NvM module ensures data storage and maintenance of NV (non volatile) data according to the individual requirements in an automotive environment.

The NvM module manages the NV data of an EEPROM and/or a FLASH EEPROM emulation device.

Memory Interface (MemIf) Module:

The Memory Abstraction Interface (MemIf) module facilitates abstraction from the underlying FEE and EA modules. Hence MemIf module provides upper layer (NvM) with a virtual segmentation on a uniform linear

This ensures that the Non-Volatile Memory Manager (NvM) is independent of the driver interface layers of EEPROM (Eep) and Flash interface (Fls)

EEPROM Abstraction(Ea.):

EEPROM driver provides services for reading, writing, erasing data to/from an EEPROM. It also provides a service for comparing a data block in the EEPROM with a data block in the memory (e.g. RAM).

Ea module facilitates abstraction from the addressing scheme of underlying EEPROM driver and hence provides a uniform addressing scheme.

This ensures that the upper layer (NvM) need not be changed if the underlying EEPROM driver and device is replaced.

Flash EEPROM Emulation (FEE) Module:

The Flash EEPROM Emulation (FEE) abstracts from the device, a specific addressing scheme and segmentation.

This provides the upper layers (NvM) with a virtual addressing scheme, segmentation as well as a virtually unlimited number of erase cycles.

Flash Driver (Fls):

Fls Driver Initializes Flash and reads/writes to Flash memory.

EEPROM driver (EeP):

EEPROM driver provides services for reading, writing, erasing to/from an EEPROM.

It also provides a service for comparing a data block in the EEPROM with a data block in the memory (e.g. RAM).

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