**Autosar**

Autosar is automotive open system architecture. It pursues the objective to create and establish an open and standardized software architecture for automotive electronic control units.

It is a common platform where applications are created.

Communication with different software is through virtual functional bus.

Autosar uses basic software to communicate with particular hardware.

Companies like BOSCH, BMW others have its own hardware specific codes for some devices.

Autosar consists of different layers:

* Application
* RTE (Run Time Environment)
* Service layer
* Complex drive
* ECU abstraction layer
* Microcontroller abstraction layer
* Hardware(microcontroller)

BSW divided into three major layers service layer, ECU abstraction layer, MC abstraction layer

Application- In this layer software component is placed. It is hardware independent.

RTE- it is used for multiple communication.

Service layer- Different functionalities like operating systems, memory services, Diagnostics services… are under this layer.

Complex drive-used for some special occasions. Directly access Microcontroller.

ECU abstraction layer-interface with mc abstraction layer. access the peripherals and devices

MC abstraction layer- contain internal drivers, internal peripherals. making MC independent of higher software.

Each layer includes different functions:

MC abstraction layer includes: MC drivers (WDT, GPT, MCU Driver, Core test)

Memory drivers (EEPROM driver, RAM test, internal flash driver, flash test)

Crypto drivers

Wireless communication drivers (Bluetooth, WIFI)

Communication drivers (CAN, flex Ray, ethernet, SPI, Lin)

I/O drivers (port driver, ADC, PWM driver, ICU driver, DIO)

ECU abstraction layer includes: onboard device abstraction, memory hardware abstraction, crypto hardware abstraction, wireless communication HW abstraction, communication hardware abstraction, i/o hardware abstraction.

Service layer includes: system services, memory services, crypto services, offboard communication services, communication services.