AUTOSAR Statement of Work
Appendix B: AUTOSAR Selection Guide

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Electrical/Electronic Systems Engineering
Architecture and Software Platform

AUTOSAR SOW Appendix B

Purpose
Assist Tier I ECU suppliers identify the following:

- Appropriate set of AUTOSAR components to procure and implement

General Information

- Not recommended for 8-bit controllers. Some 16-bit controllers may be able to support this option.
- Supports CAN, CAN-FD, LIN, and Ethernet. Multiprotocol support is integrated and inter-protocol routing can be automated.
- Supports post-build variants and configuration.
- Supports functional safety and security requirements and use-cases.

In order to meet CAN Message Authentication requirements, the AUTOSAR components must meet at minimum Classic Platform Release 4.3.0 requirements and support CAN-FD.

Standard AUTOSAR Basic Software

Category	Component	Abbreviation	Usage
RTE	Runtime Environment	Rte	Required
OS	AUTOSAR Operating System	Os	Required
System Services	BSW Mode Manager	BswM	Required
	Communication Manager	ComM	
	Default Error Tracer	Det	
	ECU State Manager	EcuM	
	Watchdog Interface	WdgIf	
	Watchdog Manager	WdgM	
Communication: General	Communication	Com	Required
	PDU Router	PduR	
	Network Management	Nm	Required if ECU must support Network Management
	Secure Onboard Communication	SecOC	Required for CAN Message Authentication
Communication: CAN	CAN Driver	Can / CanDrv	Required if ECU supports CAN or CAN-FD. CanNm is required if ECU must support Network Management over CAN.
	CAN Interface	CanIf	
	CAN State Manager	CanSM	
	CAN Transceiver Driver	CanTrcv	
	CAN Network Management	CanNm	
	CAN Transport Protocol	CanTp	
Communication: Ethernet	Ethernet Driver	Eth / EthDrv	Required if ECU supports Ethernet using AUTOSAR software
	Ethernet Interface	EthIf	
	Ethernet State Manager	EthSM	
	Ethernet Transceiver Driver	EthTrcv	
	Socket Adapter	SoAd	
	TCP/IP Stack	TcpIp	
Communication: LIN	LIN Driver	Lin / LinDrv	Required if ECU is a LIN Master
	LIN Interface	LinIf	
	LIN State Manager	LinSM	
	LIN Transceiver Driver	LinTrcv	
Communication: End-to-End Protection	End-to-End Transformer	E2eXf	Dependent on ECU requirements for End-to-End Protection.
	End-to-End Protection Wrapper	E2ePw	
	Com-based Transformer	ComXf	

			If End-to-End Protection support is required for the ECU, please contact EESE Architecture and Software Platform. **To determine End-to-End Protection requirements, please consult the Functional Safety Governance Board.**
Cryptography	Crypto Service Manager	Csm	Required if ECU must support CAN Message Authentication, GGDS Security Access service, OTA during application, or Ford Service-Oriented Architecture over Ethernet. Multiple Cry/Crypto drivers may be needed.
	Crypto Interface	CryIf	
	Crypto Driver	Cry / Crypto	
Diagnostics	Diagnostic Communication Manager	Dcm	Required if ECU must support GGDS
	Diagnostic Event Manager	Dem	
Memory	Non-Volatile Memory Manager[1]	NvM	Required
	Memory Interface[1]	MemIf	
	Flash Emulated EEPROM	Fee	Required if Flash is used for NVM
	Flash Driver	Fls	
	EEPROM Abstraction	Ea	Required if EEPROM is used for NVM
	EEPROM Driver	Eep	
Libraries	Cyclic Redundancy Check	Crc	Required
	End-to-End Protection Library	E2e	Required if E2eXf or E2ePw are used
Microcontroller Abstraction Layer (MCAL)	Microcontroller Driver	Mcu	Required
	Port Configuration	Port	
	Watchdog Driver	Wdg	
	Analog to Digital Converter	Adc	Dependent on ECU requirements and hardware usage
	Digital I/O	Dio	
	General Purpose Timer	Gpt	
	Input Capture[2]	Icu	
	Output Compare	Ocu	
	Pulse Width Modulation	Pwm	
	SPI Handler	Spi	

Table 1: Required Standard AUTOSAR Basic Software

[1] A non-volatile memory manager interface which complies with AUTOSAR specifications is required by DEM and DCM components. If a non-AUTOSAR MEM stack will be used, written approval must be obtained from EESE Architecture and Software Platform.

[2] Required in the case that CAN wakeup is required, if a microcontroller does not support direct wakeup from sleep mode by the CAN controller.

Category	Component	Abbreviation	Usage
Communication: General	I-PDU Multiplexer	IpduM	Optional May be used if ECU must support multiplex CAN messages other than the Global Configuration message.
Diagnostics	Function Inhibition Manager	Fim	Optional

Table 2: Optional Standard AUTOSAR Basic Software

Note that there may be other components for very specialized use-cases (e.g. XCP, V2X). The above table covers the most common standard components.

Additional AUTOSAR Complex Device Drivers

Additional software is required to implement certain features. This software is currently available from Vector.

Category	Component	Abbreviation	Usage
Over-the-Air Update (OTA)	OTA Server	vOtaDl / CddOsoh[3]	Required for Over-the-Air Update support during application runtime
	Driver for Program Flash	vMem / vMem_external	
PARSED	PARSED Server	vParsedServer / CddOsph[3]	Required
OVTP	On-Vehicle Telematics Protocol	vOvTp / CddOvtp[3]	Required

Table 3: Vector Complex Device Driver Software (partial list)

[3] Complex Driver product or line item name may differ from name used in software. Both are provided here.

Ford Complex Device Drivers

Contact EESE Architecture and Software Platform for access to the following components.

Category	Component	Abbreviation	Usage
CAN Message Authentication	Key Manager for CAN Message Authentication	vKeyMFord	Required for CAN Message Authentication
	Freshness Value Manager	FvM	
Ford Service-Oriented Architecture (SOA)	SOA Gateway	Cdd_SoaGw	Required for Service-Oriented Architecture support using AUTOSAR software. SOA communication uses MQTT over a TLS-secured TCP connection.
	MQTT Client	Cdd_MqttC	
	Transport Layer Security	Tls	
	TLS Wrapper for used with Vector TCP/IP stack	TlsWrapper	
	Key Manager for X.509 Certificates	KeyM	
	Crypto driver for TLS cipher suite	Crypto_1_TlsFord	

Table 4: Ford Complex Device Driver Software