![Embitel - delivered with passion]

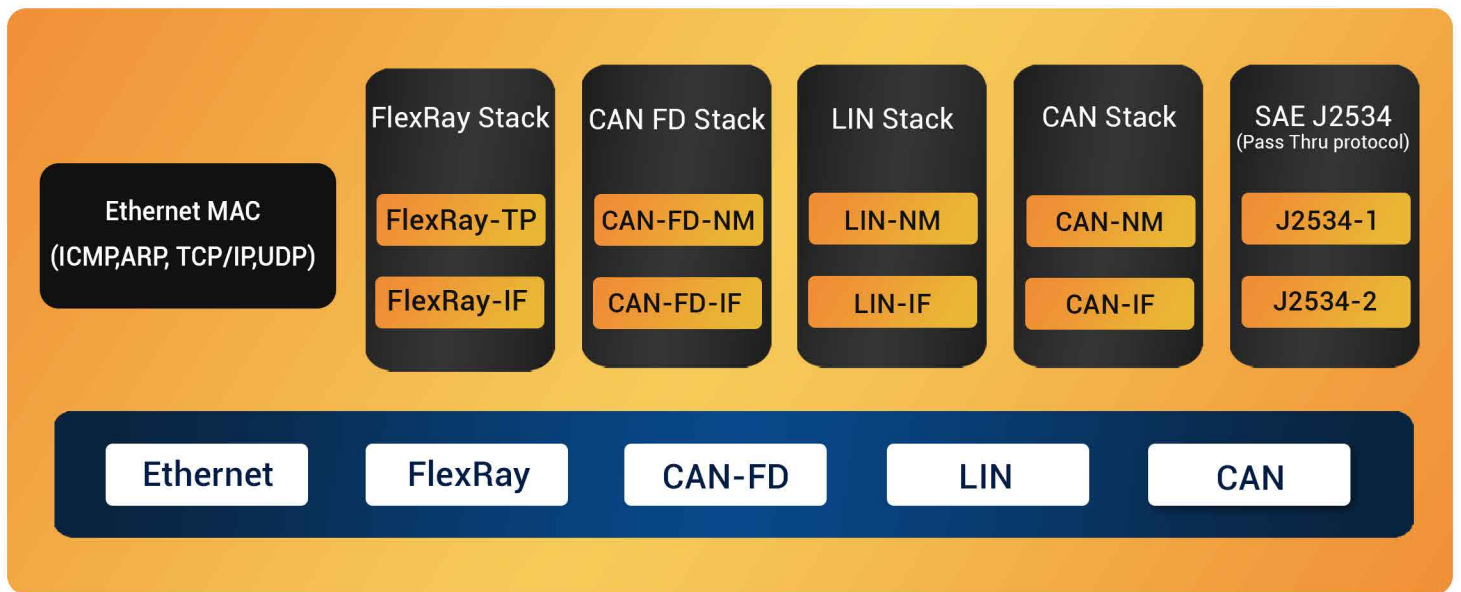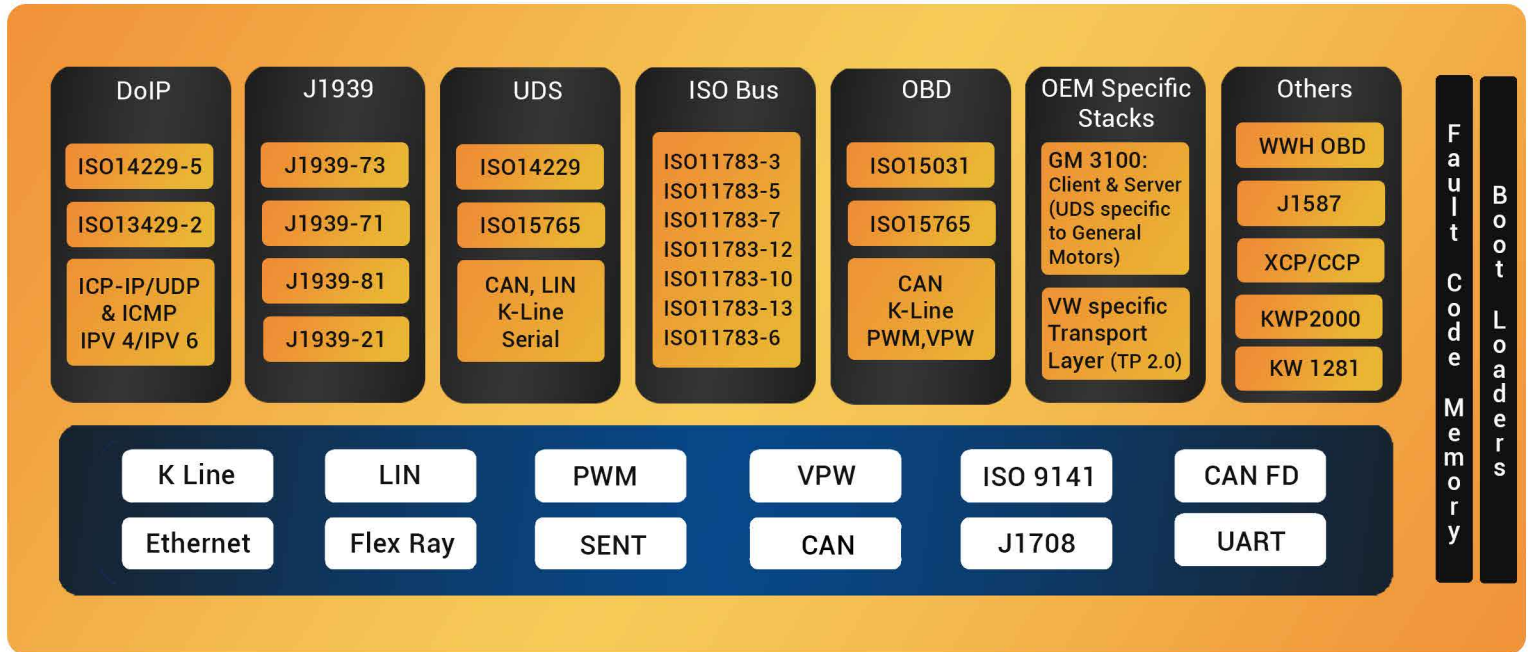# LIBRARY OF COMMUNICATION AND VEHICLE DIAGNOSTICS PROTOCOL STACKS

- Embitel provides pre-tested and ready-to-integrate protocol stacks for automotive applications.

- Developed as per the CMMI Level 3 and ISO9001:2008 guidelines.

- Coding guidelines conforms to MISRA C.

BUSINESS MODEL All **our protocol stacks are provided under a one-time licensing fee model.** Terms and conditions for business model of the stack is completely aligned with the specific requirements of the customer. We would love to **chat over a coffee to discuss your project's requirements and vision.**

EMBITEL LIBRARY OF PROTOCOL STACKS

DoIP	J1939	UDS	ISO Bus	OBD	OEM Specific Stacks	Others	Fault Code Memory	Boot Loaders
ISO14229-5	J1939-73	ISO14229	ISO11783-3 ISO11783-5 ISO11783-7 ISO11783-12 ISO11783-10 ISO11783-13 ISO11783-6	ISO15031	GM 3100: Client & Server (UDS specific to General Motors)	WWH OBD		
ISO13429-2	J1939-71	ISO15765		ISO15765		J1587		
ICP-IP/UDP & ICMP IPV 4/IPV 6	J1939-81	CAN, LIN K-Line Serial		CAN K-Line PWM,VPW	VW specific Transport Layer (TP 2.0)	XCP/CCP		
	J1939-21					KWP2000		
						KW 1281		

K Line	LIN	PWM	VPW	ISO 9141	CAN FD
Ethernet	Flex Ray	SENT	CAN	J1708	UART

Ethernet MAC (ICMP,ARP, TCP/IP,UDP)	FlexRay Stack	CAN FD Stack	LIN Stack	CAN Stack	SAE J2534 (Pass Thru protocol)
	FlexRay-TP	CAN-FD-NM	LIN-NM	CAN-NM	J2534-1
	FlexRay-IF	CAN-FD-IF	LIN-IF	CAN-IF	J2534-2

Ethernet	FlexRay	CAN-FD	LIN	CAN

Why Choose Us for Diagnostics & Communication Protocol Stacks Implementation

We have an extensive library of diagnostics and communication protocol solutions that we have perfected over a period of 13+ years. Right from process compliance to rigorous testing, our protocol stacks undergo the highest degree of quality check.

A QUICK GLANCE AT OUR QUALITY ASSURANCE PROCESSES FOR AUTOMOTIVE STACKS:

PROVEN IN USE: Over the past decade, our stacks are powering series production of ECUs for American, French, German and Asian OEMs. We have successfully delivered the stacks to these OEMs through Tier-1 suppliers and even directly in some projects.

1. Stacks have been deployed for cutting edge products including *Seat Control ECU, Roof System, Telematics, Body Control Module, Electric Power Steering* and more.

2. We have partnered with more than 50 customers for stack integration

EXTENSIVE TESTING: Our stacks have been tested/validated extensively using tools like Vector CANoe, Samdia, Busmaster. As part of the project, we have successfully tested our stacks in various vehicle models.

STATIC ANALYSIS: Static Analysis has been performed for the stacks using Polyspace and QAC. Coding Guidelines and code reviews are designed to ensure MISRA 2012 Compliance.

UNIT TESTING: Each of our automotive protocol stacks have undergone comprehensive unit testing. Automotive-grade tools such as Tessy and MxDev have been deployed for unit testing.

PROCESS COMPLIANCE: Our automotive-grade diagnostics and communication protocol stacks have been developed as per the stringent guidelines laid down by CMMI-L3 practices and ISO9001 -2008. An independent QA team manages project and process compliance.

PORTABILITY: Stacks have been developed in the ANSI C language which makes it suitable for porting to both OS and Non-OS platforms.

PROTOCOL STACK INTEGRATION AND SUPPORT SERVICES

• Implementation of Physical layer as per requirements
• Integration of stack with the target platform
• Support for Configuration of protocol stacks as per the project's requirements
• Support for tooling solution development
• MISRA C compliance report, LLD and HLD provided as deliverables

READILY AVAILABLE TOOLING SOLUTIONS

1. UDS STACK CONFIGURATION TOOL

• Supports multiple configuration
• Generate cfg.c and cfg.h files as per the configuration

2. UDS DIAGNOSTICSTOOL (PC BASED)

• Tooling solution for both Client and Server side
• Support for integration with PCAN, Vector or any third party Hardware

3. CANIF CONFIGURATION TOOL

• Generates the cfg.c and cfg.h from dbc file (CAN Matrix)
• Auto Generates MISRA C compliant code

4. LIN INTERFACE TOOL

• Generates cfg.c and cfg.h files from LDF file (LIN Configuration)
• Auto generates MISRA C compliant code

4. PC BASED REPROGRAMMING TOOL

• Supports J1939, UDS based reprograming
• Supports physical medium like LIN, CAN and CANFD, FlexRay
• Integrates with PCAN, Vector or many third party hardware

6. END OF LINE CONFIGURATION TOOL

• PC based tool to support configuration of Calibration Block
• Helps configure the parameters for different variants of a vehicle
• Generates the HEX file based on the parameter configuration

7. ODX AUTO CONFIG TOOL

• Read-to-use PC based tool for UDS configuration using ODX file
• Saves up to 90% of UDS configuration time compared to manual method

8. PC TOOL FOR ELM 327 DEVICE

• QT C++ based PC based tool to access ELM 327 device (USB and Wi-Fi drivers)
• Manages OBD commands and response from ELM 327 device

CONNECT WITH US