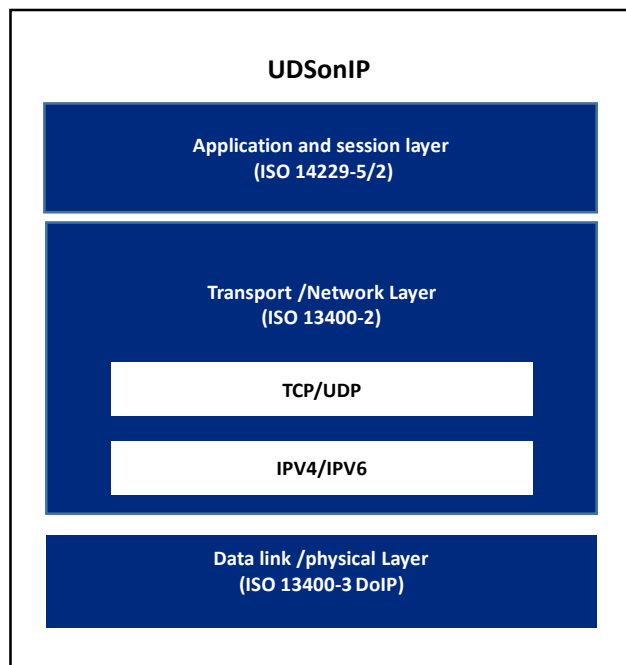


UDSonIP Protocol Stack

iWave offers the UDS Protocol Stack for client and server based on the ISO 14229 protocol to enable UDSonIP. The Unified Diagnostic Services is an automotive standardized protocol that provides a common application layer for a wide range of low layer protocols like ISO 13400-2, Ethernet, and K-Line.



The iWave UDS stack provides easy APIs for handling the diagnostics services as it implements both the application layer (ISO 14229-1) and session layer (ISO 14229-2). The iWave UDS stack provides a robust and effective way to communicate with the vehicle ECUs and carry out diagnostics. iWave has designed the stack to be fully customizable, allowing users to specify feature sets and fine-tune the stack to meet the end application requirements.

UDS Stack supports the following

services:

UDS Services	UDS Services
DiagnosticSessionControl(0x10)	ControlDTCSetting(0x85)
ECUReset(0x11)	InputOutputControlByIdentifier(0x2F)
SecurityAccess(0x27)	RoutineControl(0x31)
CommunicationControl(0x28)	RequestDownload(0x34)
TesterPresent(0x3E)	TransferData(0x36)
ReadDataByIdentifier(0x22)	RequestTransferExit(0x37)
ReadMemoryByAddress(0x23)	RequestUpload(0x35)
ReadDataByPeriodicIdentifier(0x2A)	AccessTimingParameter(0x83)
DynamicallyDefineDataIdentifier(0x2C)	ResponseOnEvent(0x86)
WriteDataByIdentifier(0x2E)	ReadScalingdatabyidentifier(0x24)
WriteMemoryByAddress(0x3D)	SecureDataTransmission(0x84)
ClearDiagnosticInformation(0x14)	Authentication(0x29)
ReadDTCInformation(0x19)	

UDS Stack Solution Package

- APIs to communicate to vehicle ECU for diagnostic purpose
- UDS stack will support to communicate through Ethernet

UDS Stack features

- Provides access to diagnostics services offered by vehicle ECUs
- Fault detection in Vehicle ECUs
- Allows to perform diagnosis on faulty ECUs
- Diagnostic Trouble Codes collection and analysis
- UDS stack is platform-independent
- Enables UDSONIP & Easy to use API
- Common application layer for low layer protocols like ISO-TP, Ethernet, K-Line
- Implements application (ISO 14229-1) and session (ISO 14229-2) layer
- Setting of vehicle-specific configuration
- Access to the vehicle ECU for Input/output control
- Collection of real-time vehicle engine data
- Configurable UDS service based on the requirements

DoIP Protocols in different OSI layers

- ISO 14229-5 UDS on IP Application
- ISO 14229-2 UDS Session
- ISO 13400-3 DoIP Transport, Network
- ISO 13400-3 DoIP Data Link, Physical

Supported Platforms

NXP i.MX 8/6 application processor
Other ARM platforms

Memory Requirements

ROM: 80kb

Value Proposition

- Supports on various ARM processors
- Robust API's which are easy to integrate
- Porting support for newer version of the software
- MISRA C compliant
- End to End solution offering

Deliverables

- Acceptance Test Plan
- Protocol Stack Source code
- User manual
- API reference manual
- Release Note

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