Product Brief

In-Vehicle Networking and Protocol Stacks

Introduction

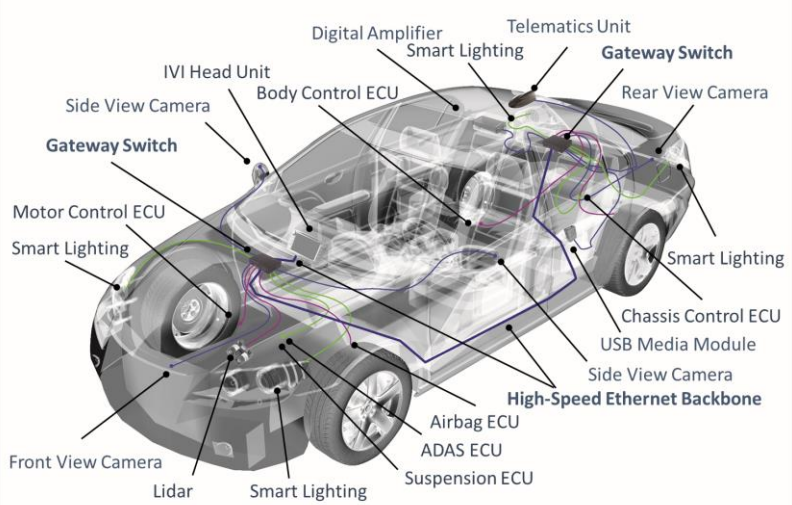
The Excelfore Networking and Protocol Stacks are a set of embedded software which provide critical functions for In-Vehicle networking. This includes protocols for diagnostics, discovery, configuration, and memory flashing. The Excelfore eAVB/TSN™ protocol stacks and bridging stacks for CAN/LIN/Flexray provide the necessary functionality for a high-speed Ethernet backbone within the heterogenous networking environment that defines today's automotive electronics.

Infotainment and automotive message traffic can use a common high-bandwidth infrastructure with guaranteed latencies providing system-level integration of many devices running a variety of operating systems on all popular automotive processors and microcontrollers, which may be resident on numerous sub-networks and busses.

Technologies

The IEEE standards and technologies supported in the different Excelfore Network Products are listed in the table below.

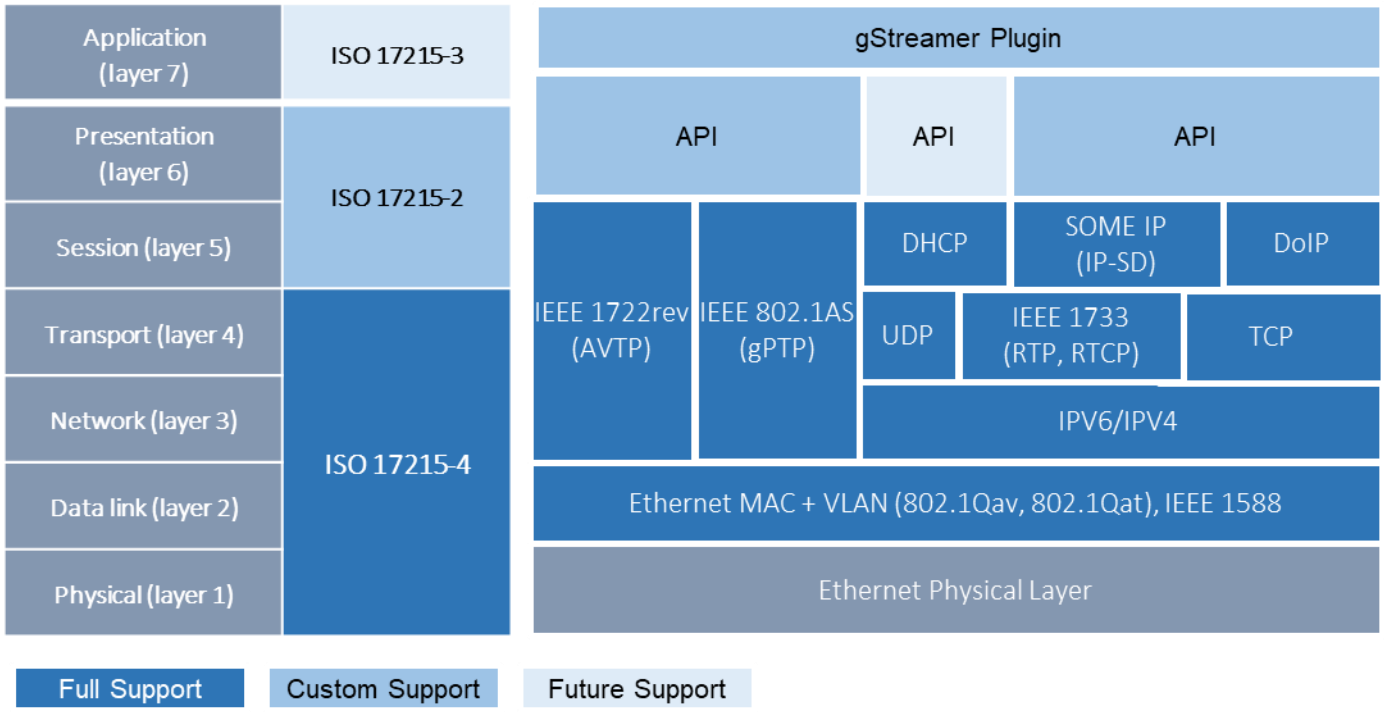
Ethernet AVB/TSN Protocols
IEEE 1722rev (layer 2) or 1733 (layer 3)
IEEE 802.1AS/IEEE1588
IEEE 802.1ASrev
IEEE 802.1Qav
IEEE 8021.Qat
IEEE 802.1Qbv
IEEE 802.1Qbu
IEEE 802.1Qci (Switch support)
VLAN, SRP, MAAP



Products

The Excelfore eAVB/TSN solution comprises of a Talker, a Listener, or both to form an end-to-end solution. Excelfore provides a variety of other embedded software for in-vehicle networking and diagnostics. Excelfore network stacks are deployed in multiple OEM and Tier-1 programs in a variety of products including ADAS cameras, Instrument Clusters, Domain controllers, Ethernet Gateways and ECUs.

In-Vehicle Network Products
Ethernet AVB/TSN Talker
Ethernet AVB/TSN Listener
Ethernet AVB/TSN Listener and Talker
CAN to Ethernet Bridging
Flexray to Ethernet Bridging
LIN to Ethernet Bridging
Managed Switch Software
DoIP
SOME/IP
UDS



Variety of Platforms

Excelfore embedded in-vehicle networking software is available for a wide variety of operating systems ranging from full high-level OS's such as Android, Linux and QNX to automotive-specific environments and RTOS's. All popular automotive processor and microcontroller families are supported.

Widespread Deployments

Excelfore has an extensive history of successful deployments of in-vehicle networking software.

OS / Platform	Linux	QNX	Integrity	AUTOSAR	Android	TI-RTOS
TI Jacinto 6	OEM	OEM		OEM		OEM
NXP I.MX6	OEM		OEM			
Qualcomm Q820A	OEM				OEM	
Intel MRB	OEM					
Renesas RCAR			Tier1			
Microchip				OEM		
NXP SJA1105, Marvell Q5050 AVB Switch + Gateway	Tier1					

US-Based Asian European

Certification

Excelfore eAVB/TSN™ stacks are the industry's first base software stacks to be certified by AVnu. Both the AVB Talker and Listener protocol stacks were certified in April, 2016.

AVNU® CERTIFIED PRODUCTS

Engineering Services

Excelfore provides expert consulting services to help electric vehicle start-ups and established OEM automakers define their next generation in-vehicle network architectures.

Excelfore provides engineering support and consulting services to help ensure successful system level integration of the in-vehicle network. Assistance in obtaining AVnu certification can include pre-certification testing and validation.

Headquarters:
Excelfore
3155 Kearney Street
Fremont. CA 94538 USA
+1-510-868-2500
www.excelfore.com

Sales Offices:
Excelfore North America
NASales@excelfore.com

Excelfore Europe
EuropeSales@excelfore.com

Excelfore China
ChinaSales@excelfore.com

Excelfore Japan
JapanSales@excelfore.com

eAVBInVehicleStacksPB.EN.20180705.v1.U.USL.PDF