Global and China Automotive Gateway Industry Report, 2019

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ResearchInChina
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STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

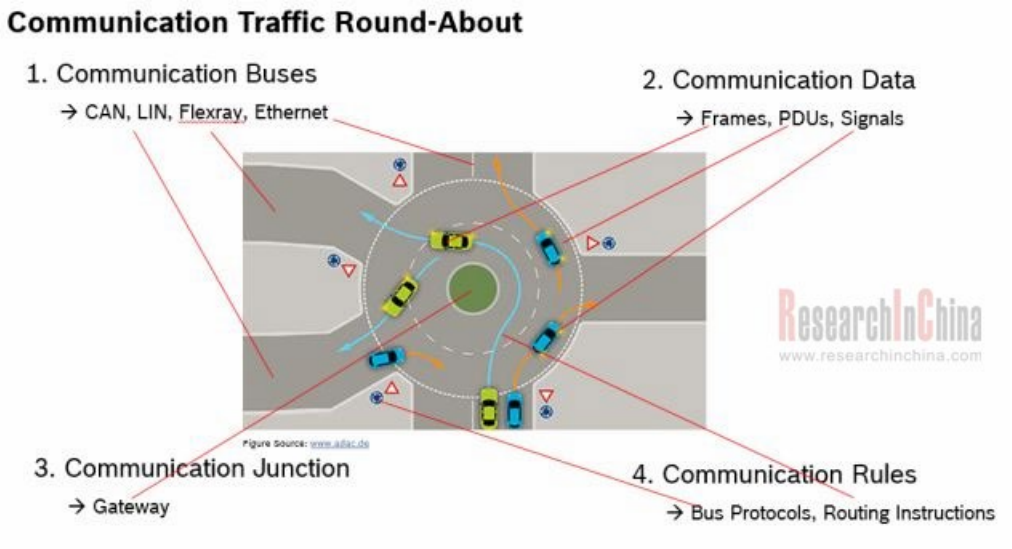
The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

Abstract

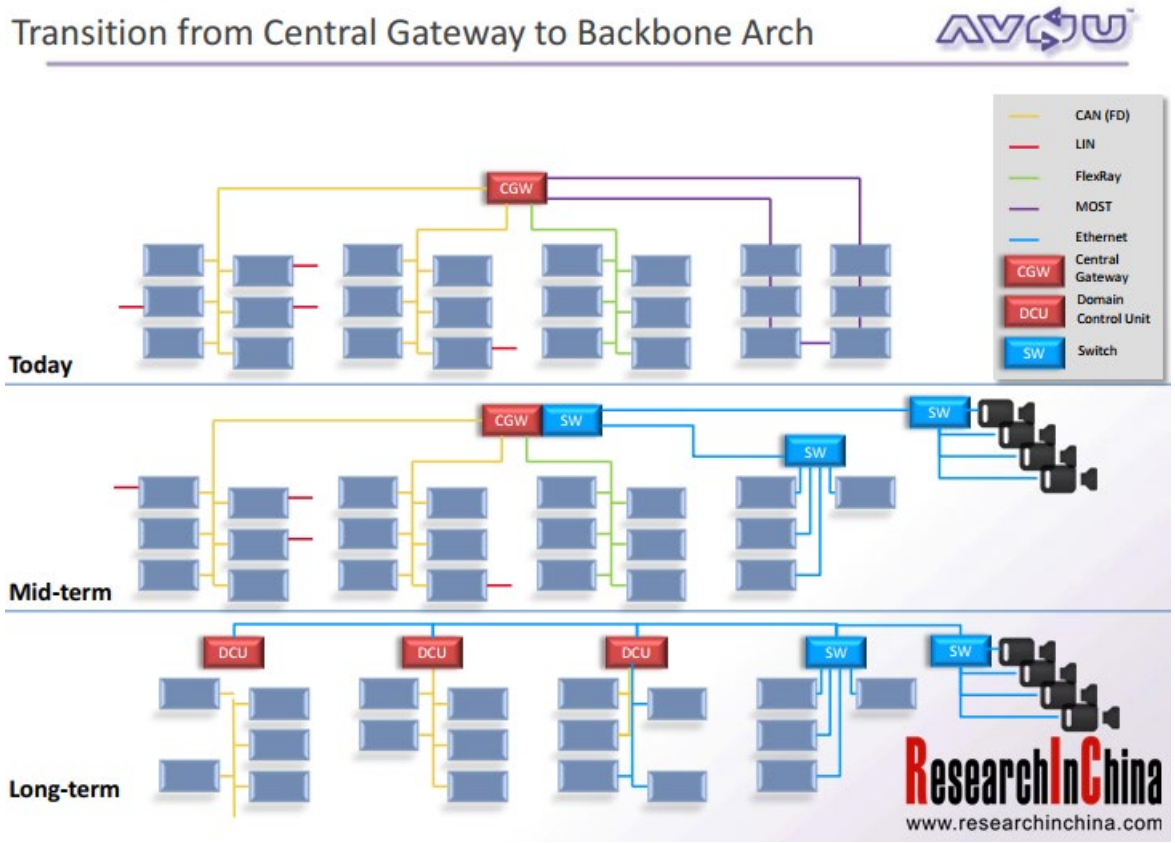
Gateway Industry Research: Increasingly Powerful Gateway Becomes the Security Core of Intelligent Connected Vehicle

The "Global and China Automotive Gateway Industry Report 2019" published recently by ResearchInChina study the status quo and trends of the automotive gateway industry, as well as the dynamics and layout of automotive gateway enterprises at home and abroad.

As a data interaction hub for vehicle networks, automotive gateway provides seamless communication between heterogeneous automotive networks (CAN, LIN, MOST, FlexRay, etc.) and address data bandwidth and security challenges. Additionally, independent gateway controller allows the optimized design of automotive EEA (Electrical/Electronic Architecture), and enables OEMs to improve the scalability of vehicle topology, the automotive safety and the confidentiality of automotive network data.



The composition and functions of automotive gateway are closely related to the development of automotive network architecture which evolves quite slowly. In the short and medium term, the network architecture led by domain controller remains the mainstream, but such an architecture requires a powerful automotive gateway. The automotive EEA tends to connect domain controllers with the Ethernet backbone before access to the central gateway through a switch.

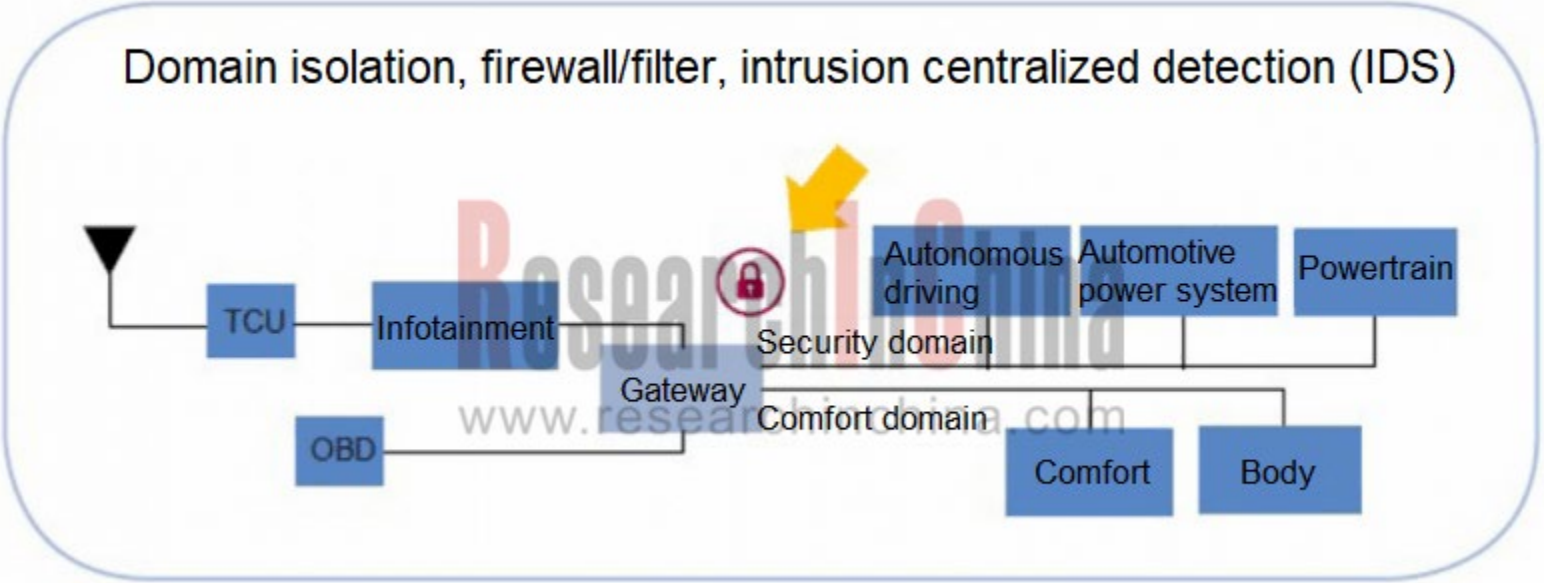


Bosch's gateways have grown from simple CAN/LIN gateway to Security CAN/LIN gateway, to the Ethernet gateway, to "networks + FOTA" gateways, and finally to automotive computer.

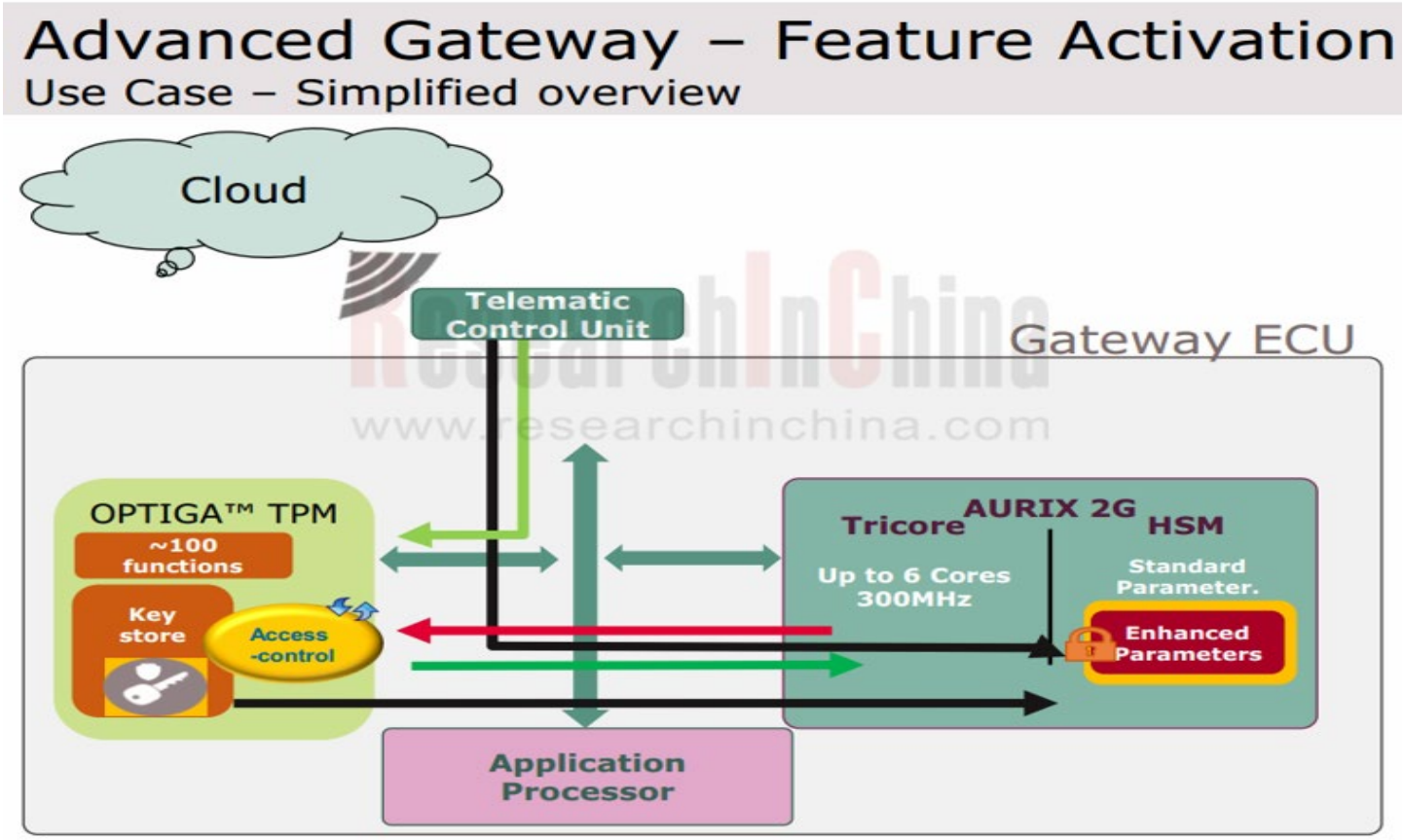
T-BOX is a gateway for information exchange between the inside and outside of vehicles. As gateways become more powerful, T-BOX may be integrated into super gateway (or gateway controller).

With the growing smart connectivity features, intelligent connected vehicle (ICV) is vulnerable to cyber-attacks, which may lead to the loss of vehicle control and injuries to drivers and passengers. Gateway security mechanism can significantly reduce the risk of cyber-attacks, secure the safety of drivers and passengers to the utmost, and prevent vehicle theft and loss of important information.

Like firewalls, security gateway controls access from external interfaces (such as the Internet) to the automotive internal network and determine which nodes in the automotive network can communicate with each other. Security gateway also features functional domain isolation, for example, isolation between an untrusted infotainment system and a trusted security critical system.



The security processing layer of the next-generation gateway processor renders secure boot and real-time integrity inspection mechanisms to provide embedded hardware security modules (HSM) for encryption and security key management. Infineon's gateway solution, as shown below, uses the OPTIGATM Trusted Platform Module (TPM) to guarantee external communications.



NXP's gateway chip MPC5748G and ST's new MCU Stellar (available for smart gateways) are also provided with HSM hardware security modules.

Suppliers of gateway products include Continental, Bosch, FEV, HiRain Technologies, and UAES.

In addition to using security gateway chips, gateway vendors need to develop and integrate more security components. For instance, Continental launched end-to-end network security and online software update (OTA) solutions with its subsidiaries Elektrobit and Argus in 2018. Elektrobit provides security components for application layer, HSM, AUTOSAR basic software and bootloader security solutions. For the typical nodes and networks of intelligent connected vehicle, Argus prohibits malware installation, detects operating system anomalies, isolates suspicious applications, prevents attacks from spreading, and protects ECUs from receiving or sending illegal messages.

The gateway controllers of HiRain Technologies have been supplied to FAW, Shanghai GM, JMC, Zotye, BAIC and other OEMs. In June 2019, HiRain Technologies signed a cooperation agreement with Argus to enhance the security of its gateway products.

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