

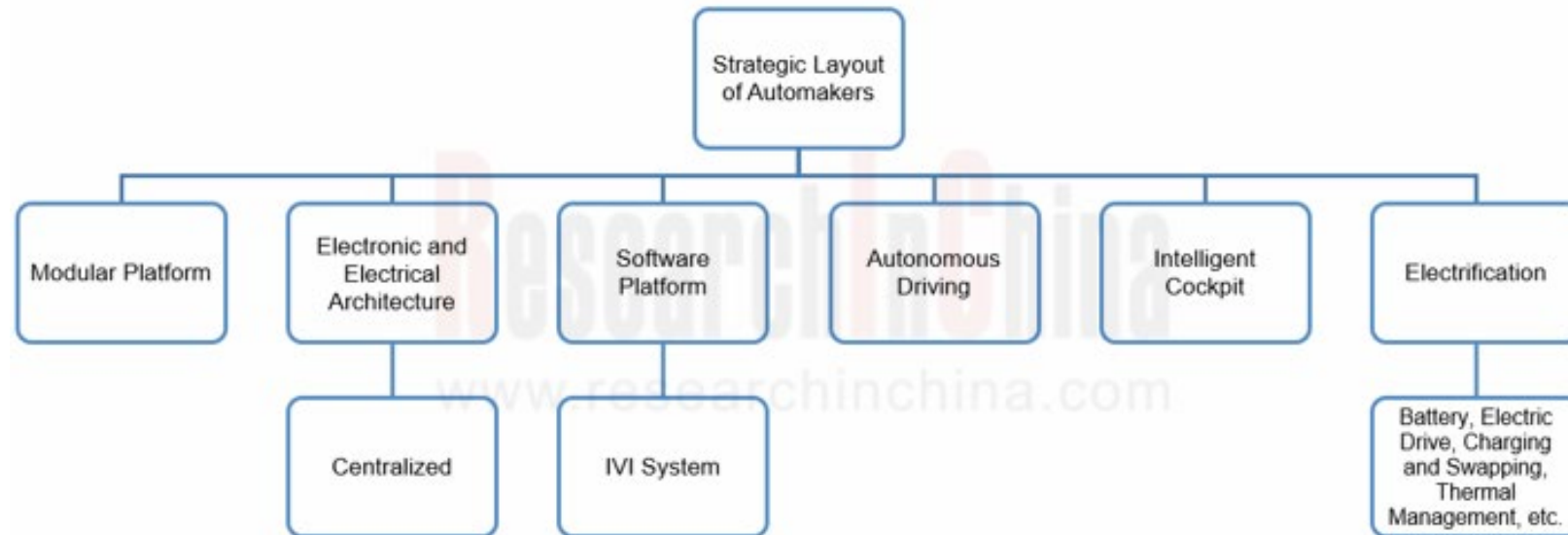
ResearchInChina
www.researchinchina.com

**Global and Chinese Automakers’
Modular Platform and
Technology Planning Research
Report, 2023**

June 2023

Research on modular platforms: explore intelligent evolution strategy of automakers after modular platforms become widespread.

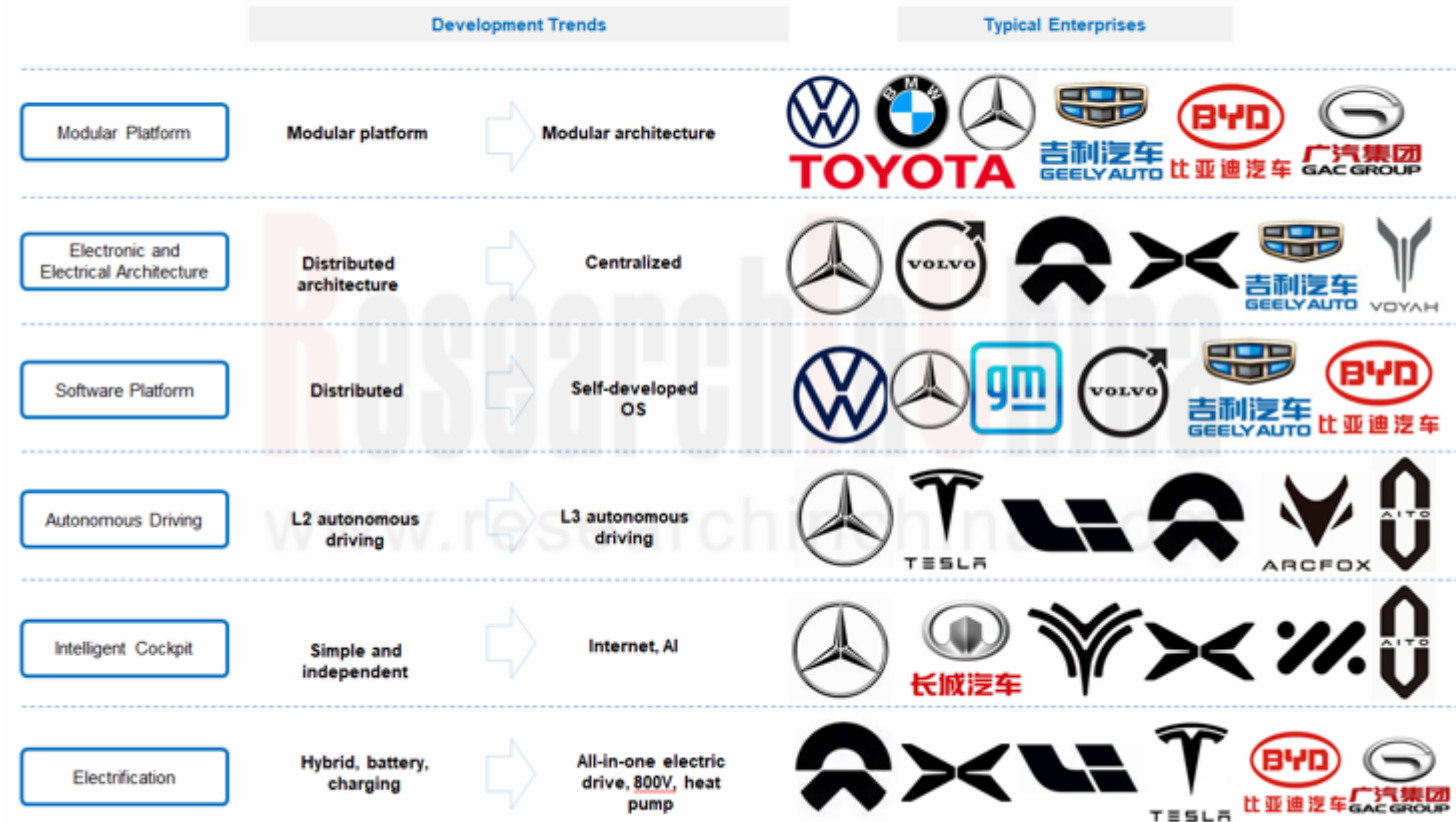
By analyzing the planning of international automakers, Chinese conventional automakers and emerging car brands for modular platform architectures, autonomous driving and other technologies, the report explores the significance and role of modular platform architectures in new energy vehicles in today's electrification and intelligence development.



The path of new energy vehicle development is gradually clear: modular architecture + intelligence.

For a model or a range of models, there are two most important automotive architectures: chassis & body architecture, and electronic and electrical architecture. The chassis + electronic architecture platform provides a further guarantee for the scale, development speed and reliability of new energy vehicles. With vehicle intelligence, the software platform, autonomous driving, intelligent cockpit and electrification of vehicles have become important indicators affecting vehicle performance.

Development Trends of Modular Platform Architectures and Intelligence & Electrification Technologies of Major Automakers



Source: ResearchInChina

The exclusive all-electric platform architecture has become the foundation for R&D of vehicle models.

In the R&D process of new energy vehicles, there are two different technology paths: new energy vehicles (PHEV+EV) are refitted on conventional fuel-powered vehicles, also known as “fuel to electricity”, and most still have fuel-powered models; products are built on brand-new exclusive all-electric platforms/architectures.

In the early development of new energy vehicles, most conventional automakers developed new energy vehicles by way of “fuel to electricity”. Yet as new energy vehicles boom, such new energy models are not enough to meet the development needs for more intelligent, more optimized, more integrated and higher performance new energy vehicles. The all-electric platform technology has matured. To adapt to the development trend for electrification, conventional automakers have launched exclusive all-electric modular platforms/architectures, and will develop more in the future.

Modular Platforms/Architectures for New Energy Vehicle Models of Conventional Automakers

Automaker	Modular Platforms/Architectures for New Energy Vehicle Models
Volkswagen	MQB, MLB EVO, MEB , PPE , SSP
Audi	MQB, MLB EVO, MEB, J1 platform , PPE , SSP
Porsche	MLB EVO, MSB, J1 platform , PPE , SSP Sport .
BMW	UKL, FAAR, CLAR, Neue Klasse
Mercedes-Benz	MRA, MFA II, EVA , MMA , EQG platform , VAN.EA
GM	BEV1 , BEV2 , Ultium
Ford	CD4/D4, GE1 , GE2 , TE1 , Volkswagen MEB Platform
Toyota	TNGA, e-TNGA
Honda	CGP, e:N Architecture F , e:N Architecture W
Renault-Nissan-Mitsubishi	CMF, CMF-BEV , CMF-EV
Hyundai Kia	i-GMP, E-GMP , IMA
Stellantis	eCMP, EMP2, STLA SMALL , STLA MEDIUM , STLA LARGE , STLA FRAME
Volvo	SPA2, CMA, SEA , GPA
BYD	BSP, BMP, BLP, Yisifang
SAIC	MIP, SSA, SIGMA , Mount Everest, Nebula , Galaxy
FAW	FMA, FME
GAC	GPMA, i-GPMA
Geely	SPA, BMA, CMA, FE and SEA
Great Wall	PEI, L.E.M.O.N, Coffee, Tank, ME
Changan	P3, Ark, Wuyue, EPA , SDA
Dongfeng	CMF, EMP, EMA-E, DSMA, M TECH , Quantum
BAIC	BMFA, Xingkong , BE21 , IMC

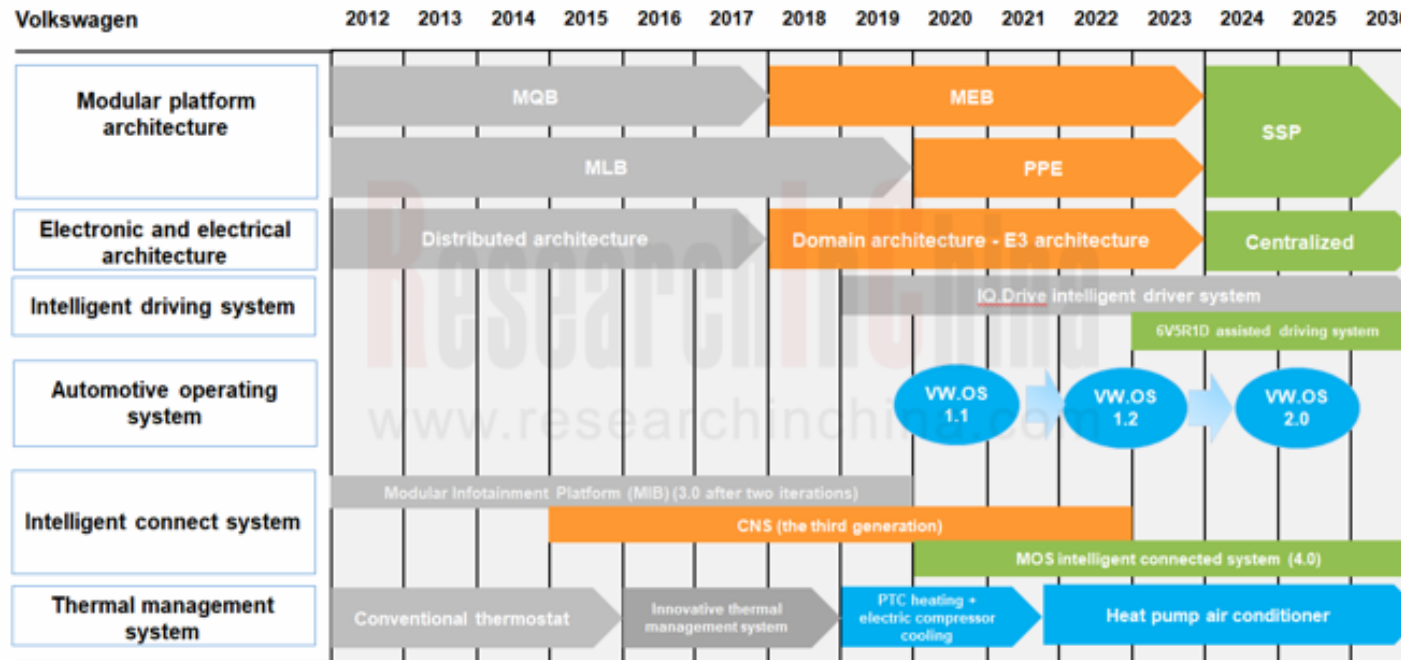
Note: **The platforms/architectures marked in bold** means new all-electric platforms/architectures of automakers.

Source: ResearchInChina

Development Trends of Volkswagen's Modular Platform and Technology

For example, from 2019 to 2030, Volkswagen will make intensive efforts on modular platform architectures, E/E architectures, intelligent driving systems, software platforms, intelligent cockpits and electrification platforms: from 2024 onwards, the Scalable Systems Platform (SSP) will replace MEB and PPE as the main architecture of new battery-electric vehicle models; the centralized E/E architecture will substitute the domain architecture as a standard part of the SSP; in the field of autonomous driving and intelligent cockpit, VW.OS2.0 will become the mainstream software platform; the IVI system MOS 4.0 based on Samsung Exynos Auto V9 will become the mainstream cockpit system.

Development Trends of Volkswagen's Modular Platform and Technology



Source: ResearchInChina

City NOA system is produced and applied on a large scale.

China's upcoming L3 autonomous driving standard will favor the fast commercial application of autonomous driving. From the perspective of the autonomous driving systems of new energy vehicles, the commercial use of city NOA systems has become the key to L2+ ~ L3 autonomous driving systems.

As Xpeng, Li Auto and Avatr among others announced the layout of city NOA (navigate on autopilot), the system that offers point-to-point intelligent driving assistance goes into mass production and wide adoption in 2023.

Intelligent Driving 3.0 of Li Auto has enabled city NOA from highway NOA, and notified beta users in the second quarter of 2023. It will spread to 100 cities of China in late 2023.



Table of Content (1)

1 Summary on Platforms and Technology Planning of Automakers

- 1.1 Electrification Strategic Platforms of Automakers
 - 1.1.1 Classified Electrification Strategic Layout of Automakers
 - 1.1.2 The Latest Technology Trends of Electrification Strategic Layout of Automakers
- 1.2 Modular Platform Layout of Automakers
 - 1.2.1 Definition of Automotive Modular Platforms
 - 1.2.2 Advantages and Disadvantages of Automotive Modular Platforms
 - 1.2.3 Status Quo of Modular Platforms/ Architectures of Automakers
 - 1.2.4 Modular Platforms Upgrade to Modular Architectures
 - 1.2.5 Comparison between Module Architectures of Automakers (1)
 - 1.2.6 Comparison between Module Architectures of Automakers (2)
 - 1.2.7 Comparison between Module Architectures of Automakers (3)
 - 1.2.8 Business Model Derived from Modular Platforms
 - 1.2.9 Modular Platforms Evolve to Skateboard Chassis
 - 1.2.10 Major Players and Commercialization of Skateboard Chassis
- 1.3 E/E Architecture Layout of Automakers
 - 1.3.1 E/E Architecture Layout of Traditional Automakers
 - 1.3.2 E/E Architecture Layout of Emerging Automakers
 - 1.3.3 Comparison between Major OEM E/E Architectures (1)
 - 1.3.4 Comparison between Major OEM E/E Architectures (2)
 - 1.3.5 Comparison between Major OEM E/E Architectures (3)
 - 1.3.6 Comparison between Major OEM E/E Architectures (4)
- 1.4 Software Platform Layout of Automakers
 - 1.4.1 Self-developed OS Ecology of Automakers
 - 1.4.2 Automotive Operating Systems
 - 1.4.3 Software Platform Layout of Major Automakers

2 Modular Platforms and Technology Planning of Foreign Automakers

- 2.1 Volkswagen
 - 2.1.1 Development Trends of Platform Technology
 - 2.1.2 New Energy Modular Platform Planning
 - 2.1.3 Modular Platform - MEB Platform
 - 2.1.5 Modular Platform - Production Bases/Model Planning of MEB Platform
 - 2.1.6 Modular Platform - PPE Platform
 - 2.1.7 Modular Platform - SSP Platform
 - 2.1.9 Modular Platform - Autonomous Driving of SSP Platform
 - 2.1.10 Modular Platform - Models of SSP Platform
 - 2.1.11 Automotive E/E Architecture Planning
 - 2.1.12 E/E Architecture - MEB Platform
 - 2.1.15 Software Platform - E3 Platform
 - 2.1.16 Automotive Software Platform Development Route
 - 2.1.17 Software Platform - VW.OS 2.0
 - 2.1.18 Software Platform - Self-developed VW.OS
 - 2.1.19 Autonomous Driving - IQ.Drive Intelligent Driver System
 - 2.1.20 Autonomous Driving - 6V5R1D Intelligent Driving with Chinese Characteristics
 - 2.1.22 Autonomous Driving - Two-step Solution
 - 2.1.23 Intelligent Cockpit - Development of Intelligent Connectivity System
 - 2.1.27 Electrification Platform - Cell
 - 2.1.29 Electrification Platform - Battery System
 - 2.1.31 Electrification Platform - Development Stages of Automotive Thermal Management System
 - 2.1.33 Electrification Platform - Development of Charging Facilities
 - 2.1.34 Electrification Platform - NEW AUTO Strategy
- 2.2 Audi
 - 2.2.1 New Energy Modular Platform Planning
 - 2.2.2 Modular Platform - J1 Performance
 - 2.2.3 Modular Platform - PPE Platform Architecture

Table of Content (2)

- 2.2.4 Modular Platform - Positioning of Models of PPE Platform
- 2.2.5 Modular Platform - Electric Drive System of PPE Platform
- 2.2.6 Modular Platform - 800V Battery of PPE Platform
- 2.2.7 Modular Platform - Motor Cooling System of PPE Platform
- 2.2.8 Modular Platform - Battery Cooling System of PPE Platform
- 2.2.9 Autonomous Driving - Intelligent Driving Assistance
- 2.2.10 Autonomous Driving - Hardware of Intelligent Driving Assistance
- 2.2.11 Autonomous Driving - Hardware Configuration of the 2023 Q5 e-tron
- 2.2.12 Development Process of Intelligent Cockpit
- 2.2.13 Intelligent Cockpit - Third-generation MIB System
- 2.2.14 Electrification Platform - Development Stages of Automotive Thermal Management System
- 2.2.15 Electrification Platform - Thermal Management System Structure of Q4 e-tron
- 2.3 Porsche
 - 2.3.1 New Energy Modular Platform Planning
 - 2.3.2 Modular Platform - MSB Platform
 - 2.3.4 Modular Platform - J1 Platform
 - 2.3.5 Modular Platform - SSP Sport
- 2.4 BMW
 - 2.4.1 New Energy Modular Platform Planning
 - 2.4.2 Modular Platform - FAAR Platform
 - 2.4.3 Modular Platform - CLAR Platform
 - 2.4.4 Modular Platform - Comparison between FAAR and CLAR
 - 2.4.5 Modular Platform - Neue Klasse Architecture
 - 2.4.7 E/E Architecture Planning
 - 2.4.8 E/E Architecture - Next-generation E/E Architecture
 - 2.4.12 IVI System Evolution
 - 2.4.13 Autonomous Driving - Development History
 - 2.4.14 Development History of Cockpit Controllers
 - 2.4.15 Electrification Platform - eDrive System Development Planning
 - 2.4.16 Electrification Platform - Development Stages of Automotive Thermal Management System
- 2.5 Mercedes-Benz
 - 2.5.1 New Energy Modular Platform Planning
 - 2.5.2 Modular Platform - Classification of Fuel Vehicles/Fuel-to-Electric platforms
 - 2.5.3 Modular Platform - Development Direction of Electric Platform
 - 2.5.4 Modular Platform - EVA Platform 2.0
 - 2.5.5 Modular Platform - MMA Platform
 - 2.5.6 Modular Platform - EA Platform
 - 2.5.7 E/E Architecture Planning
 - 2.5.8 E/E Architecture - STAR3 E/E Architecture
 - 2.5.9 E/E Architecture - Central Integrated E/E Architecture
 - 2.5.10 Software Platform - MB.OS
 - 2.5.14 Autonomous Driving
 - 2.5.15 Intelligent Cockpit System
 - 2.5.16 Electrification Platform - Power Battery
 - 2.5.17 Electrification Platform - Electric Drive System
 - 2.5.18 Electrification Platform - Charging Technology
- 2.6 GM
 - 2.6.1 New Energy Modular Platform Planning
 - 2.6.2 Modular Platform - Ultium Platform
 - 2.6.4 Modular Platform - Ultium Platform System Design
 - 2.6.5 Modular Platform - Powertrain of Ultium Platform
 - 2.6.7 Modular Platform - Battery Technology of Ultium Platform
 - 2.6.8 Modular Platform - Battery Management System of Ultium Platform
 - 2.6.9 Modular Platform - Safety Protection of Ultium Platform
 - 2.6.10 E/E Architecture Planning
 - 2.6.11 E/E Architecture - New Global B Architecture

Table of Content (3)

- 2.6.12 Software Platform - Ultifi Software Platform
- 2.6.13 Software Platform - Software Electronic Architecture (VIP)
- 2.6.14 Development Process of Autonomous Driving
- 2.6.15 Autonomous Driving - ADAS Technology Route
- 2.6.16 Smart Cockpit - Next-generation Virtual Cockpit System (VCS)
- 2.6.17 Electrification Platform - Development Stages of Automotive Thermal Management System
- 2.7 Ford
 - 2.7.1 New Energy Modular Platform Planning
 - 2.7.2 Modular Platform - GE2 Platform
 - 2.7.3 Modular Platform - TE1 Platform
 - 2.7.4 E/E Architecture Planning
 - 2.7.8 Software Platform - Blue Oval Intelligence
 - 2.7.9 Autonomous Driving Layout
 - 2.7.10 Autonomous Driving - BlueCruise
 - 2.7.11 Autonomous Driving - Evolution of Co-Pilot360 Intelligent Driver Assist System
 - 2.7.12 Autonomous Driving - Co-Pilot360 Intelligent Driver Assist System
 - 2.7.13 Electrification Platform - Thermal Management System
 - 2.7.14 Electrification Platform - Battery Solution
 - 2.7.16 Electrification Platform - European Electrification Strategy
- 2.8 Toyota
 - 2.8.1 New Energy Modular Platform Planning
 - 2.8.2 Modular Platform - TNGA Architecture
 - 2.8.4 Modular Platform - TNGA Architecture Classification
 - 2.8.5 Modular Platform - TNGA Architecture Breakdown
 - 2.8.7 Modular Platform - e-TNGA (Modular Platform for Electric Vehicles)
 - 2.8.8 Modular Platform - e-TNGA Structure
 - 2.8.9 E/E Architecture Planning
 - 2.8.10 E/E Architecture - Central & Zone Concept
 - 2.8.12 Software Platform - Arene OS
 - 2.8.14 Autonomous Driving Solution Evolution
 - 2.8.15 Intelligent Cockpit - T-smart Intelligent Cockpit
 - 2.8.16 Electrification Platform - Hybrid Route Planning
 - 2.8.17 Electrification Platform - Battery Cell Development
 - 2.8.18 Electrification Platform - Electrification Transformation of GAC
- 2.9 Honda
 - 2.9.1 New Energy Modular Platform Planning
 - 2.9.2 Modular Platform - e:N Architecture
 - 2.9.3 Modular Platform - e:N Architecture F
 - 2.9.4 Modular Platform - e:N Architecture W
 - 2.9.5 Modular Platform - Models with e:N Architecture
 - 2.9.6 Autonomous Driving - Full-stack Intelligent Control Ecosystem "e:N OS"
 - 2.9.7 Autonomous Driving - Honda SENSING 360
 - 2.9.8 Autonomous Driving - Honda SENSING Elite
 - 2.9.9 Intelligent Cockpit - Intelligent System Development
 - 2.9.10 Intelligent Cockpit - CONNECT 3.0
 - 2.9.11 Intelligent Cockpit - CONNECT 4.0
 - 2.9.12 Electrification Platform - Electric Product Layout of GAC
- 2.10 Renault-Nissan-Mitsubishi Alliance
 - 2.10.1 Renault-Nissan-Mitsubishi Alliance
 - 2.10.2 Renault - New Energy Modular Platform Planning
 - 2.10.3 Nissan - New Energy Modular Platform Planning
 - 2.10.4 Mitsubishi - New Energy Modular Platform Planning
 - 2.10.5 Renault-Nissan-Mitsubishi Modular Platform - Common Module Family (CMF)
 - 2.10.6 Renault-Nissan-Mitsubishi Modular Platform - CMF EV Platform
 - 2.10.11 Renault-Nissan-Mitsubishi Modular Platform - CMF-BEV Platform
 - 2.10.12 Renault-Nissan-Mitsubishi Autonomous Driving - Alliance Cloud System

Table of Content (4)

- 2.10.14 Renault-Nissan-Mitsubishi Intelligent Cockpit - Nissan Connect 2.0/PLUS
 - 2.10.15 Renault-Nissan-Mitsubishi Electrification Platform - Development of Three-in-one Electric Drive
 - 2.10.16 Renault-Nissan-Mitsubishi Electrification Platform - Battery Strategy
 - 2.10.17 Renault-Nissan-Mitsubishi Electrification Platform - Battery Standard Modularization
 - 2.10.19 Renault-Nissan-Mitsubishi Electrification Platform - Solid State Battery
 - 2.11 Hyundai Kia
 - 2.11.1 New Energy Modular Platform Planning
 - 2.11.2 Hyundai Kia Modular Platform - i-GMP Platform
 - 2.11.3 Hyundai Kia Modular Platform - E-GMP Platform
 - 2.11.8 Hyundai Kia Modular Platform - Integrated Modular Architecture (IMA)
 - 2.11.9 Hyundai Kia Modular Platform - Standardized Battery of IMA
 - 2.11.10 Hyundai Kia Modular Platform - Battery and Electric Drive System of IMA
 - 2.11.11 Hyundai Mobis Modular Platform - electric Complete Chassis Platform Module (eCCPM)
 - 2.11.13 Hyundai Mobis Modular Platform - e- Corner System for Parallel Parking
 - 2.11.14 Hyundai Software Platform - Software Service Strategy
 - 2.11.15 Hyundai Software Platform - ccOS
 - 2.11.16 Hyundai - Autonomous Driving Strategic Planning
 - 2.11.18 Kia - Autonomous Driving Strategic Planning
 - 2.11.19 Hyundai - Electrification Development Strategy 2025
 - 2.11.20 Hyundai - Electrification Strategy 2030
 - 2.11.22 Kia - Electrification Strategy 2030
 - 2.11.24 Hyundai Kia - Flying Car Technology Strategy 2040
 - 2.11.25 Hyundai Kia Electrification Platform - Development Stages of Automotive Thermal Management System
 - 2.12 Stellantis
 - 2.12.1 New Energy Modular Platform Planning
 - 2.12.2 Modular Platform - CMP/eCMP
 - 2.12.3 Modular Platform - Electric Drive, Battery and Electric Control System of CMP/eCMP
 - 2.12.4 Modular Platform - EMP2 Platform
 - 2.12.5 Modular Platform - EMP2 Platform Architecture
 - 2.12.6 Modular Platform - Electric Drive, Battery and Electric Control System of EMP2 Platform
 - 2.12.7 Modular Platform - Flexible Battery-electric Vehicle Production Platform
 - 2.12.8 Modular Platform - STLA Architecture
 - 2.12.10 Software Platform - STLA Brain Architecture
 - 2.12.14 Electrification Platform - ACC Battery Super Factory
 - 2.13 Volvo
 - 2.13.1 New Energy Modular Platform Planning
 - 2.13.2 Modular Platform - GPA Platform
 - 2.13.3 E/E Architecture Planning
 - 2.13.4 E/E Architecture - Zonal Architecture
 - 2.13.5 E/E Architecture - New E/E Architecture Planning
 - 2.13.6 E/E Architecture - SPA2 E/E Architecture
 - 2.13.7 E/E Architecture - SOA Software of SPA2 E/E Architecture
 - 2.13.8 Software Platform - VolvoCars.OS
 - 2.13.9 Autonomous Driving - L3 Ride Pilot
 - 2.13.10 Autonomous Driving - Polestar Intelligent Driving Hardware System
 - 2.13.11 Electrification Platform - Bidirectional Charging
 - 2.13.12 Electrification Platform - Wireless Charging
- 3 Modular Platforms and Technology Planning of Chinese Independent Automakers**
- 3.1 BYD
 - 3.1.1 New Energy Modular Platform Planning
 - 3.1.3 Modular Platform - BNA Architecture

Table of Content (5)

- 3.1.4 Modular Platform - Yisifang Technology Platform
- 3.1.5 Electric Technology Platform - e-Platform
- 3.1.7 Electric Technology Platform - e-Platform 3.0
- 3.1.8 Electric Technology Platform - BYD DiSus Intelligent Body Control System
- 3.1.9 E/E Architecture Planning
- 3.1.11 Software Platform - BYD OS
- 3.1.12 Autonomous Driving - DiPilot Intelligent Driving Assistance System
- 3.1.14 Autonomous Driving - DNP Highway NOA
- 3.1.15 Intelligent Cockpit - Functional Evolution of DiLink Intelligent Cockpit System
- 3.1.16 Intelligent Cockpit - DiLink System
- 3.1.17 Electrification Platform - CTB Structure of Blade Battery
- 3.1.18 Electrification Platform - New Energy Vehicle Thermal Management
- 3.1.19 Electrification Platform - Development Stages of Automotive Thermal Management System
- 3.1.20 Electrification Platform - Development of Charging Facilities
- 3.1.21 Electrification Platform - 800V High-voltage Flash Charging Technology
- 3.1.22 Electrification Platform - DENZA D9 Dual Charging Technology
- 3.2 SAIC
 - 3.2.1 New Energy Modular Platform Planning
 - 3.2.2 Modular Platform - SIGMA Architecture
 - 3.2.4 Modular Platform - Mount Everest Architecture
 - 3.2.5 Modular Platform - Models with Mount Everest Architecture
 - 3.2.6 Modular Platform - Nebula Platform
 - 3.2.7 Modular Platform - Galaxy Platform
 - 3.2.8 Galaxy Full-stack Solution
 - 3.2.9 E/E Architecture - Z-One SOA Platform
 - 3.2.11 E/E Architecture - SIGMA Architecture
 - 3.2.12 Evolution of MG PILOT Active Driving Assistance System
 - 3.2.13 MG PILOT 3.0
- 3.2.14 Electrification Platform - BMFA Battery System
- 3.2.15 Electrification Platform - Development Stages of Automotive Thermal Management System
- 3.2.16 Electrification Platform - MARVEL R Thermal Management System
- 3.2.17 Electrification Platform - BMFA Battery Thermal Management System
- 3.2.18 Electrification Platform - Charging Facilities
- 3.3 FAW
 - 3.3.1 New Energy Modular Platform Planning
 - 3.3.2 Modular Platform - FMA Architecture
 - 3.3.4 E/E Architecture Planning
 - 3.3.6 Autonomous Driving - Autonomous Driving Layout of Hongqi
 - 3.3.7 Intelligent Cockpit - Intelligent Cockpit Platform of Hongqi
 - 3.3.8 Intelligent Cockpit - Hongqi HC3.0
 - 3.3.9 Intelligent Cockpit - Future Intelligent Cockpit Layout of Hongqi
- 3.4 GAC Trumpchi
 - 3.4.1 New Energy Modular Platform Planning
 - 3.4.2 Modular Platform - GPMA Architecture
 - 3.4.3 Modular Platform - i-GPMA Architecture
 - 3.4.4 Modular Platform - Trumpchi E9 with i-GPMA
 - 3.4.5 Software Platform - ADiGO PILOT System
 - 3.4.6 Intelligent Cockpit - Super-sensing Interactive Intelligent Cockpit
 - 3.4.7 Electrification Platform - Development History of Hybrid System
 - 3.4.8 Electrification Platform - Trumpchi Intelligent and Electric Hybrid
 - 3.4.11 Electrification Platform - GMC2.0 Battery
- 3.5 Geely
 - 3.5.1 New Energy Modular Platform Planning
 - 3.5.2 Modular Platform - Sustainable Experience Architecture (SEA)
 - 3.5.3 Modular Platform - Main Features of SEA
 - 3.5.4 Modular Platform - Compact Modular Architecture (CMA)

Table of Content (6)

- 3.5.5 Modular Platform - CMA Super Matrix
- 3.5.6 E/E Architecture Planning
- 3.5.7 E/E Architecture - GEEA 3.0
- 3.5.8 Software Platform - Galaxy OS
- 3.5.9 Software Platform - Galaxy NOS
- 3.5.10 Autonomous Driving - Evolution of G-Pilot Intelligent Driving System
- 3.5.11 Autonomous Driving - Hardware of Models with G-Pilot Intelligent Driving System
- 3.5.12 Intelligent Cockpit - Cockpit Domain Controller/Snapdragon 8155 (Xingyue L)
- 3.5.13 Electrification Platform - Hybrid Route Planning
- 3.5.16 Electrification Platform - Development Stages of Automotive Thermal Management System
- 3.5.17 Electrification Platform - Development of Charging Facilities
- 3.6 Great Wall
 - 3.6.1 New Energy Modular Platform Planning
 - 3.6.2 Modular Platform - L.E.M.O.N Platform
 - 3.6.3 Modular Platform - Tank Platform
 - 3.6.4 Evolution of Automotive E/E Architecture
 - 3.6.5 E/E Architecture - Smart Chassis-by-Wire
 - 3.6.6 E/E Architecture - GEEP 4.0
 - 3.6.8 E/E Architecture - E/E Architecture Solution Summary
 - 3.6.9 Autonomous Driving Layout
 - 3.6.10 Autonomous Driving - Coffee Intelligence
 - 3.6.11 Autonomous Driving - Coffee Intelligence 2.0
 - 3.6.12 Autonomous Driving - Haomo.AI
 - 3.6.13 Intelligent Cockpit - Coffee OS
 - 3.6.14 Intelligent Cockpit - Coffee OS 2
 - 3.6.15 Intelligent Cockpit - Digital Transformation of Nobo Automotive Systems
 - 3.6.16 Intelligent Cockpit - Intelligent Cockpit Layout of Nobo Automotive Systems
 - 3.6.17 Electrification Platform - Dayu Battery Technology
 - 3.6.18 Electrification Platform - 800V Fast Charging Layout
- 3.7 Changan Automobile
 - 3.7.1 New Energy Modular Platform Planning
 - 3.7.2 Modular Platform - New energy Architecture Update
 - 3.7.3 Modular Platform - Ark Architecture
 - 3.7.4 Modular Platform - EPA Platform
 - 3.7.6 Modular Platform - SDA Architecture
 - 3.7.7 Modular Platform - Chassis Power System of SDA Architecture
 - 3.7.8 Evolution of E/E Architecture
 - 3.7.12 Autonomous Driving Development Planning
 - 3.7.13 Autonomous Driving - APA Roadmap
 - 3.7.14 Autonomous Driving - RTDriveOS
 - 3.7.15 Intelligent Cockpit - UIN-T Intelligent Cockpit Platform
 - 3.7.16 Electrification Platform - Overall Efficiency of EPA 1
 - 3.7.18 Electrification Platform - Electric Drive System of EPA 1
 - 3.7.19 Electrification Platform - Development of Charging Facilities
- 3.8 Dongfeng Motor
 - 3.8.1 New Energy Modular Platform Planning
 - 3.8.2 Modular Platform - EMA-E Architecture
 - 3.8.4 Modular Platform - New Energy Platform Layout Planning 2023
 - 3.8.5 Modular Platform - DSMA Multi-energy Low-carbon Energy-saving Modular Architecture
 - 3.8.7 Modular Platform - Quantum Smart Electric Modular Architecture
 - 3.8.8 Autonomous Driving - FX Leiting Intelligent Driving System
 - 3.8.9 Electrification Platform - Armor Battery
- 3.9 BAIC BJEV
 - 3.9.1 New Energy Modular Platform Planning
 - 3.9.2 Modular Platform - BMFA

Table of Content (7)

- 3.9.3 Modular Platform - BE22 Platform
- 3.9.4 Intelligent Cockpit - Intelligent Cockpit Planning
- 3.9.5 Electrification Platform - Development of Charging Facilities
- 3.9.6 Battery Swap Station Layout

4 Modular Platforms and Technology Planning of Emerging Automakers

- 4.1 Tesla
 - 4.1.1 New Energy Modular Platform Planning
 - 4.1.2 Modular Platform - Platform Architecture of Model 3 and Model Y
 - 4.1.3 E/E Architecture - Architecture Evolution
 - 4.1.5 E/E Architecture - E/E Architecture of Model 3
 - 4.1.6 E/E Architecture - Features of E/E Architecture of Model 3
 - 4.1.8 E/E Architecture - E/E Architecture of Model X
 - 4.1.9 E/E Architecture - E/E Architecture of Model S
 - 4.1.10 E/E Architecture - Architecture Solution Summary
 - 4.1.11 Autonomous Driving - Technology Development Path
 - 4.1.12 Autonomous Driving - FSD/AP System Iteration
 - 4.1.13 Electrification Platform - Battery System
 - 4.1.14 Electrification Platform - Development Stages of Automotive Thermal Management System
 - 4.1.15 Electrification Platform - Thermal Management System Technology Route
 - 4.1.16 Electrification Platform - Higher and Higher Thermal Management System Integration
 - 4.1.17 Electrification Platform - Summary of Four Generations of Thermal Management System Modes
 - 4.1.18 Electrification Platform - Development of Charging Facilities
 - 4.1.19 Electrification Platform - Super Charging Pile Equipment
- 4.2 NIO
 - 4.2.1 New Energy Modular Platform Planning

- 4.2.2 Modular Platform - NT2.0 Platform
- 4.2.3 Evolution of E/E Architecture
- 4.2.5 E/E Architecture - Domain Controller Architecture
- 4.2.6 Development History of Autonomous Driving
- 4.2.7 Software Platform - Aquila Super Sensing System
- 4.2.8 Autonomous Driving - Comparison between Intelligent Driving Technology Platforms
- 4.2.9 Autonomous Driving - NIO Assisted and Intelligent Driving (NAD) Platform
- 4.2.10 Intelligent Cockpit Development Route
- 4.2.11 Intelligent Cockpit - ET7
- 4.2.13 Electrification Platform - Charging and Swapping Infrastructure Layout
- 4.2.14 Electrification Platform - First/Second/Third-generation Swap Station
- 4.2.15 Electrification Platform - Super Charging Station
- 4.3 Li Auto
 - 4.3.1 New Energy Modular Platform Planning
 - 4.3.2 Modular Platform - Second-generation Extended Range Electric X Platform
 - 4.3.4 Modular Platform - High-voltage Battery-electric Whale/Shark Platform
 - 4.3.5 E/E Architecture Iteration
 - 4.3.6 E/E Architecture Development Planning
 - 4.3.8 E/E Architecture - Zonal Controller
 - 4.3.9 Software Platform - Self-developed OS
 - 4.3.10 Autonomous Driving Technology Platform
 - 4.3.11 Autonomous Driving - AD Max Intelligent Driving System
 - 4.3.12 Autonomous Driving - AD Max 3.0
 - 4.3.13 Intelligent Cockpit
 - 4.3.14 Electrification Platform - Thermal Management System
 - 4.3.15 Electrification Platform - L9 Thermal Management System Suppliers
 - 4.3.16 Electrification Platform - Development of Charging Facilities
 - 4.3.17 Electrification Platform - 800V Super Charging Network

Table of Content (8)

- 4.3.18 Electrification Platform - 4C Super Charging Station Construction
- 4.4 Xpeng
 - 4.4.1 New Energy Modular Platform Planning
 - 4.4.2 Modular Platform - Vehicle Manufacturing Platform
 - 4.4.3 Modular Platform - SEPA 2.0
 - 4.4.4 Evolution of E/E Architecture
 - 4.4.5 E/E Architecture - EEA 3.0
 - 4.4.6 Evolution of XPILOT Autonomous Driving System
 - 4.4.7 Autonomous Driving - XPILOT 4.0
 - 4.4.8 Autonomous Driving - XNGP All-scenario Intelligent Assisted Driving
 - 4.4.13 Electrification Platform - Development Stages of Automotive Thermal Management System
 - 4.4.14 Electrification Platform - X-HP Intelligent Thermal Management System
 - 4.4.16 Electrification Platform - P7 Vehicle Thermal Management Solution
 - 4.4.17 Electrification Platform - Charging and Swapping Infrastructure Layout
 - 4.4.18 Electrification Platform - S4 Super Fast Charging Station
 - 4.4.19 Electrification Platform - 800V Super Fast Charging Platform
- 4.5 HUAWEI AITO
 - 4.5.1 New Energy Modular Platform Planning
 - 4.5.2 Autonomous Driving - HUAWEI ADS 2.0
 - 4.5.3 Autonomous Driving - Vehicle Model Hardware Assembly
 - 4.5.4 Intelligent Cockpit - HarmonyOS 3.0
 - 4.5.5 Electrification Platform - HUAWEI DriveONE
 - 4.5.6 Electrification Platform - DriveONE Next-generation Hyper-converged Gold Power Platform
- 4.6 Neta
 - 4.6.1 New Energy Modular Platform Planning
 - 4.6.2 Modular Platform - Shanghai Platform
 - 4.6.3 Modular Platform - Intelligence of Shanghai Platform
 - 4.6.4 Development of Intelligent Driving Assistance System
 - 4.6.5 Autonomous Driving - NETA PILOT 3.0
 - 4.6.6 Autonomous Driving - NETA PILOT 4.0
 - 4.6.7 Electrification Platform - Haozhi Strategy
 - 4.6.8 Electrification Platform - Tiangong Battery
 - 4.6.9 Electrification Platform - Thermal Management System
- 4.7 Leapmotor
 - 4.7.1 New Energy Modular Platform Planning
 - 4.7.2 Modular Platform - NR2 Platform
 - 4.7.3 Modular Platforms - Independent R&D
 - 4.7.4 Intelligent Cockpit
 - 4.7.5 intelligent Cockpit - Leapmotor OS
 - 4.7.6 Electrification Platform - Battery Technology Trends
 - 4.7.7 Electrification Platform - Battery Technology
 - 4.7.8 Electrification Platform - 800V Fast Charging
- 4.8 Aion
 - 4.8.1 New Energy Modular Platform Planning
 - 4.8.2 Modular Platform - AEP3.0
 - 4.8.3 Modular Platform - Key Technology of AEP3.0
 - 4.8.5 Evolution of E/E Architecture
 - 4.8.6 E/E Architecture - X-Soul
 - 4.8.9 Autonomous Driving Solution Layout
 - 4.8.10 Autonomous Driving - ADiGO 4.0
 - 4.8.11 Autonomous Driving - Upgrade of ADiGO 4.0
 - 4.8.12 Autonomous Driving - ADiGO 5.0
 - 4.8.13 Electrification Platform - Magazine Battery
 - 4.8.14 Electrification Platform - Development trends of Charging and Swapping Platform
 - 4.8.15 Electrification Platform - Super Charging and Swapping

Table of Content (9)

- 4.8.16 Electrification Platform - Super Charging Station
- 4.9 Voyah
 - 4.9.1 New Energy Modular Platform Planning
 - 4.9.2 Modular Platform - Electric Smart Secure Architecture (ESSA)
 - 4.9.4 Centralized SOA
 - 4.9.6 Autonomous Driving Evolution
 - 4.9.7 Autonomous Driving - V-pilot Intelligent Driving Assistance System
 - 4.9.8 Intelligent Cockpit
 - 4.9.9 Electrification Platform - Power System
 - 4.9.10 Electrification Platform - Power System: Battery-electric Version
 - 4.9.11 Electrification Platform - Power System: Extended Range Version
 - 4.9.13 Electrification Platform - Fast Charging Technology
- 4.10 IM Motors
 - 4.10.1 New Energy Modular Platform Planning
 - 4.10.2 Modular Platform - iO Architecture
 - 4.10.3 AI4M Intelligent Strategy
 - 4.10.7 E/E Architecture Planning
 - 4.10.8 Autonomous Driving - Evolution of IM AD Intelligent Driving System
 - 4.10.9 Intelligent Cockpit - ICM
 - 4.10.10 Electrification Platform - Development of Charging Facilities
 - 4.10.11 Electrification Platform - Wireless Charging
- 4.11 ZEEKR
 - 4.11.1 New Energy Modular Platform Planning
 - 4.11.2 Functional Iteration of ZEEKR OS for Intelligent Cockpit
 - 4.11.3 Intelligent Cockpit - Main Functions of ZEEKR OS
 - 4.11.4 Intelligent Cockpit - ZEEKR OS
 - 4.11.5 Electrification Platform - "Electric Drive, Battery and Electric Control" System
- 4.12 ARCFOX
 - 4.12.1 New Energy Modular Platform Planning
 - 4.12.2 Modular Platform - BE21 Platform
 - 4.12.3 Modular Platform - IMC
 - 4.12.5 E/E Architecture
 - 4.12.6 Autonomous Driving Layout
 - 4.12.7 Intelligent Driving System
 - 4.12.8 Electrification Platform - Super Charging Station Construction
- 4.13 Avatr
 - 4.13.1 New Energy Modular Platform Planning
 - 4.13.2 Development Process of Intelligent Driving System
 - 4.13.3 Autonomous Driving - Intelligent Driving System
 - 4.13.4 Autonomous Driving - Hardware of Intelligent Driving System
 - 4.13.5 Intelligent Cockpit - Automotive Intelligent System
 - 4.13.6 Electrification Platform - High-voltage Fast Charging Station



Beijing Headquarters

TEL: 010-82601561, 82863481
FAX: 010-82601570



Chengdu Branch

TEL: 028-68738514
FAX: 028-86930659

Website: [ResearchInChina](http://ResearchInChina.com)

WeChat: Zuosiqiche

