



中国汽车技术研究中心有限公司  
China Automotive Technology and Research Center Co., Ltd.

# CATARC In-depth of Automotive Industries Development in China

(CATARC)

JUL , 2019



*Part One*

# PROFILE

# PROFILE



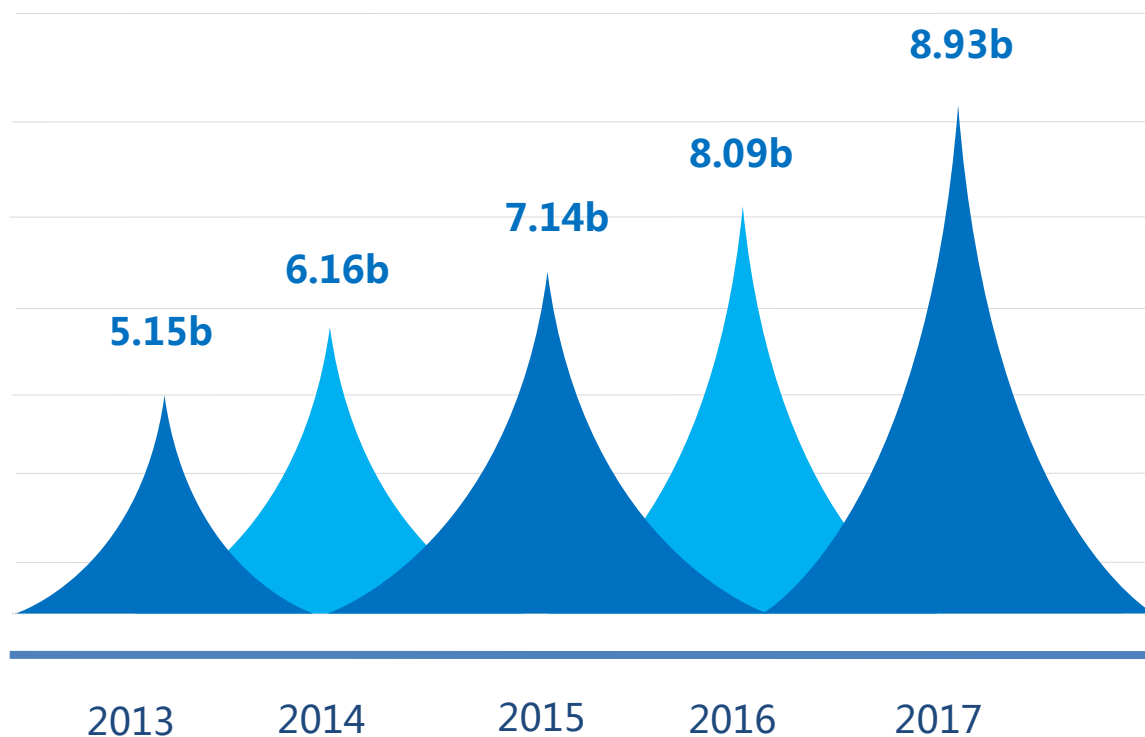
Established in 1985, China Automotive Technology & Research Center Co., Ltd. (CATARC) is a central government-level enterprise belonging to SASAC (State-owned Assets Supervision and Administration Commission of the State Council ) and a comprehensive science and technology corporate group with extensive influence in the automotive industry home and abroad.





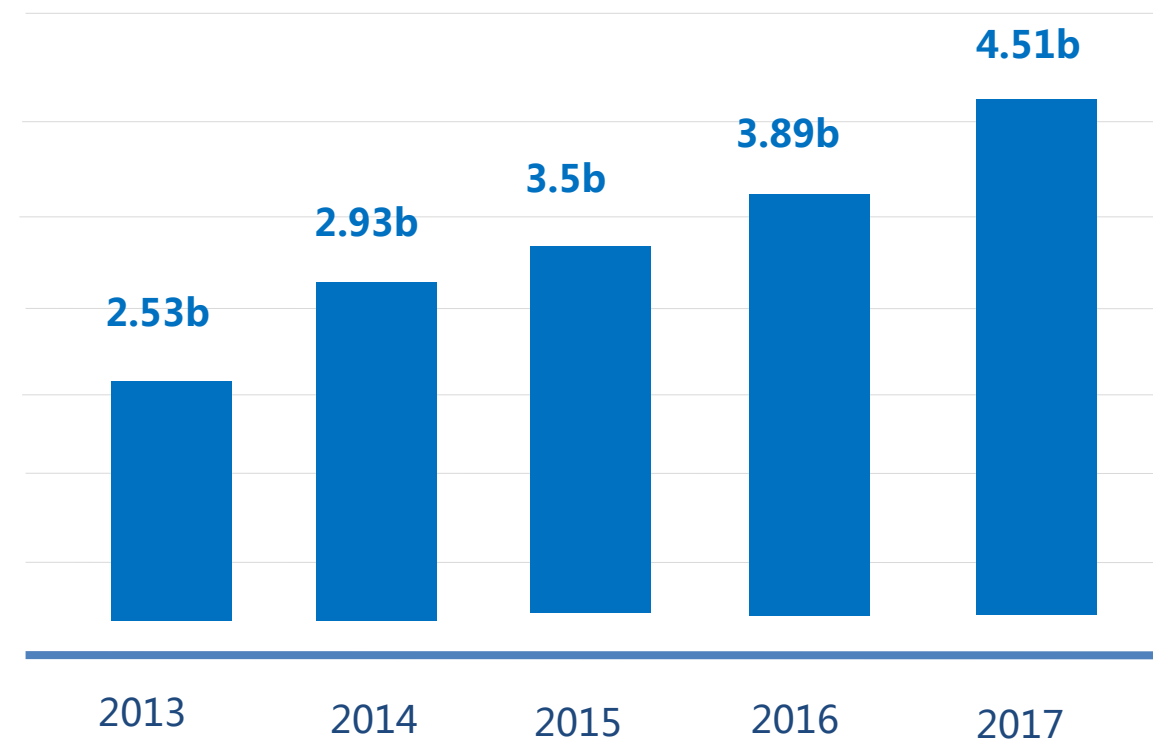
## Total assets

- Rising over 10% year-on-year in the past 5 years
- Total assets exceeding RMB 8.9 billion (USD 1.4 billion)

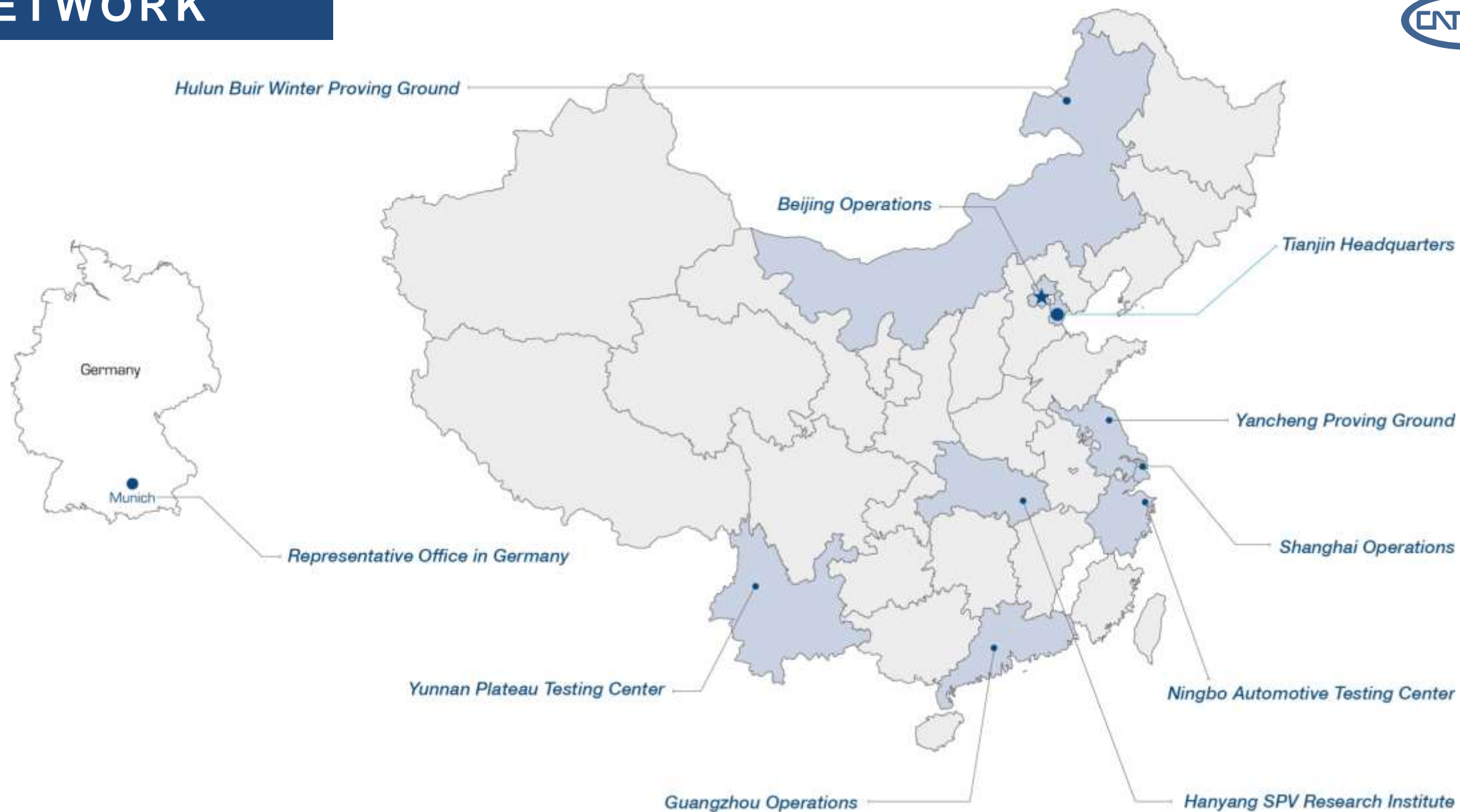


## Sales revenue

- Increasing by 12.5% on average in the past 5 years
- Sales revenue in 2017 reached RMB 4.51 billion (USD 715 million), rising 16% year-on-year



# NETWORK





# ORGANIZATIONAL STRUCTURE



## CATARC Co., Ltd.

### Administrative Departments ( 7 )

- General Office (CPC Committee Office and Board Office)
- Dept. of Human Resources (Dept. of CPC Committee Organizing)
- Dept. of Development and Operation
- Dept. of Science and Technology Development
- Dept. of Finance
- Dept. of Discipline Inspection and Supervision
- Dept. of Party Building

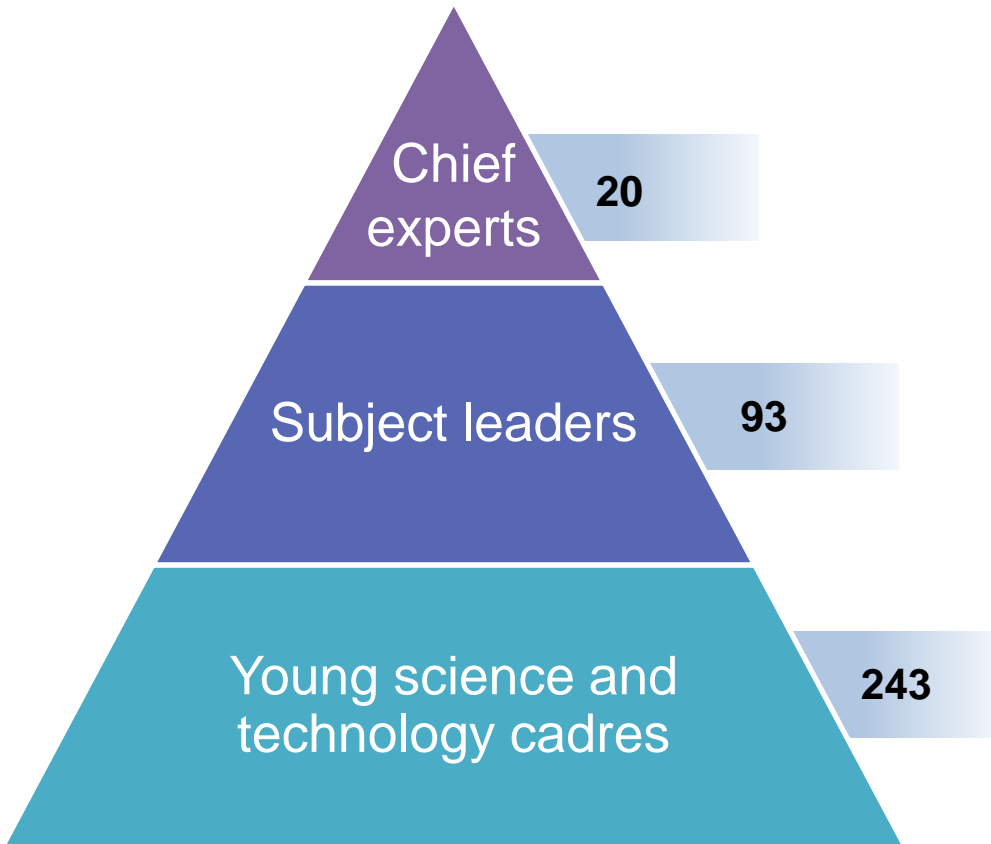
### Business Departments and Wholly-owned Subsidiaries ( 22 )

- Auto Standardization Research Institute
- Auto Testing Research Institute (National Passenger Car Quality Supervision and Inspection Center)
- CATARC Automotive Industry Engineering (Tianjin) Co., Ltd.
- Auto Technical Information Research Institute
- Automotive Engineering Research Institute
- CAQC Certification Inc.
- Automotive Data Center
- C-NCAP Management Center
- C-ECAP Management Center
- China automotive Consumer Research and Testing center
- Post-doctoral Workstation for Science and Technology Research
- Beijing Operations (Beijing CATARC Science and Technology Center Co., Ltd.)
- Vehicle Safety & Forensic Technology Research Institute
- Shanghai Operations (Shanghai CATARC Automotive Technology Center Co., Ltd.)
- Hanyang Special-purpose Vehicle Research Institute
- Guangzhou Operations (CATARC Science and Technology Co., Ltd.)
- Tianjin CATARC Auto High-tech Co., Ltd.
- Tianjin Tianfeng Vehicle Interior Trimming Co., Ltd.
- Tianjin Tianhang Automotive Industry Trade Co., Ltd.
- Tianjin CATARC Century Hotel
- Commanding Office of the Headquarters Construction
- Property Service Department

### Shareholding Companies ( 7 )

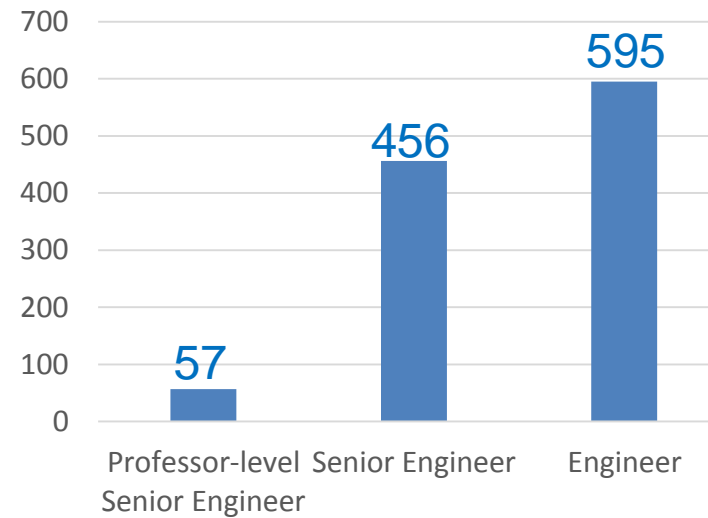
- China Vehicle Technical Service Center Co., Ltd.
- CATARC Yancheng Auto Proving Ground Co., Ltd.
- Tianjin SwARC Automotive Research Laboratory Co., Ltd.
- Ningbo Auto Component Testing Co., Ltd.
- CATARC Motor Vehicle Quality Inspection Center (Ningbo) Co., Ltd.
- Tianjin CATARC-Luxcontrol Vehicle Technology Service Co., Ltd.
- CATARC Motor Vehicle Quality Inspection Center (Yunnan) Co., Ltd.

# TALENT PYRAMID

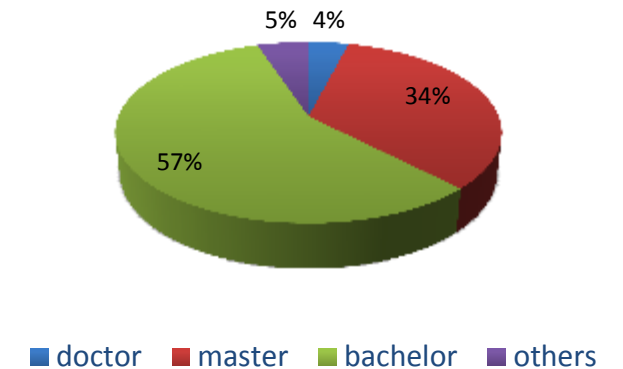


**Talent pyramid : 2779 out of the total 4672 employees in CATARC are technical professionals**

- 57 professor-level senior engineers
- 456 senior engineers
- 595 engineers
- 111 doctors
- 938 masters
- 1588 bachelors



**breakdown of the diploma of the technical professionals**



*Part Two*

# WHAT'S CATARC



Per the authorization of the government and industrial authorities, CATARC carries out the management of investment project consultation and evaluation, catalogue management, and VIN/WMI management.



## Investment project consultation and evaluation

- Undertake the consultation and evaluation of the investment projects entrusted by NDRC and MIIT and provide consultation and evaluation advice to the government



## Catalogue management

- Audit the vehicle manufacturer admission permit
- Audit the vehicle product admission permit



## VIN/WMI management

- VIN management office
- Inspection of VIN and WMI



As the first ranking national think tank in the automotive industry oriented to the government, society and enterprises, CATARC provides analysis report and policy suggestions on the macro control and the drafting of medium and long term industrial development plans and key industrial policies for all levels of governments.



National development plan for the automotive industry



Automotive industry policy



Management of investment and admission



Automotive finance and taxation



NEV (New Energy Vehicle)



Management of energy saving



Technology policy



Low carbon, IT and intelligentization



Trade and investment policy of WTO/FTA/BIT



Import and export



ELV(end of life vehicle) and recycling



Vehicle dealing and after-market



Finance and insurance



Regional industrial development

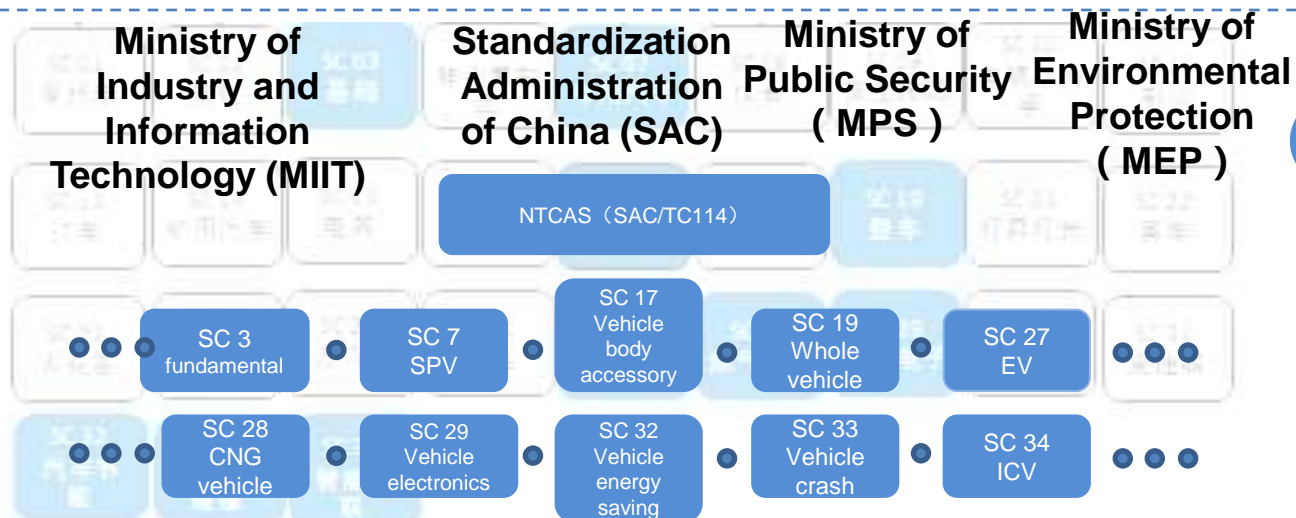


Study on corporate strategy and competitiveness

# STANDARDS AND REGULATIONS



CATARC is in charge of the centralized management of the national standardization and technical regulations of the national automotive industry.



1

CATARC plays the roles or conducts the work as below:

- Secretariat of NTCAS (National Technical Committee of Automotive Standardization)
- Secretariat of Automotive Branch of China Association for Standardization
- Secretariat of over 10 branches of fundamental and whole vehicle areas etc.
- Standards research in the key areas
- Standard information service and consultation for the automotive industry

2

- Secretariat of Chinese WP29 Working Committee
- Centralized administration body for international standards as ISO, IEC etc. in China
- Study on the export market certification regulations/ admission system
- Harmonize the regulations among various countries and regions and participate in bilateral or multilateral technical exchange

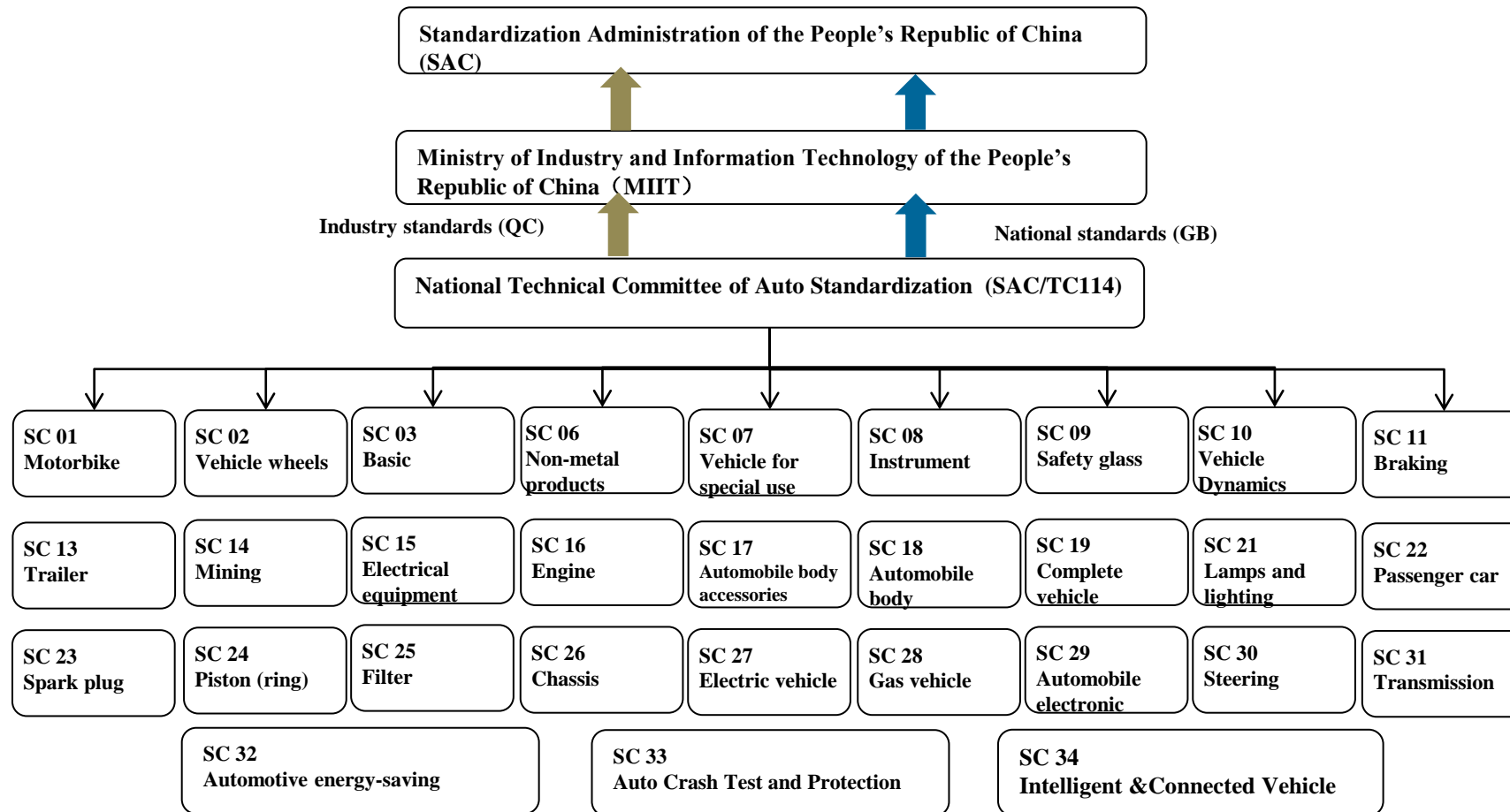


# STANDARDS AND REGULATIONS

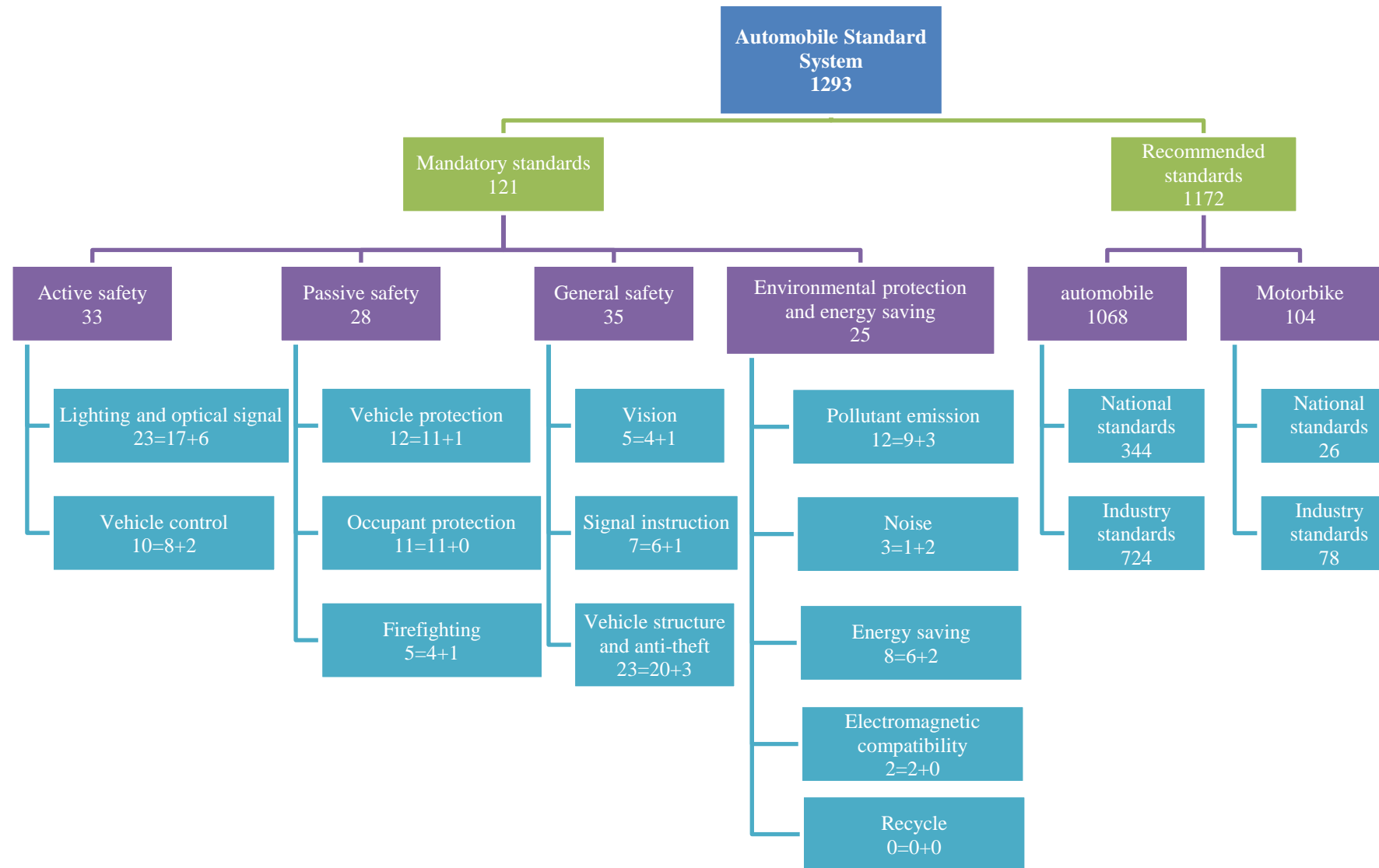
## Organization Structure of Automobile Standard Committee

Secretariat of National Technical Committee of Auto Standardization (SAC/TC 114, founded in 1988)

---the largest specialized technology committee under the National Standard Committee, consisting of 30 specialized sub-committees



# STANDARDS AND REGULATIONS





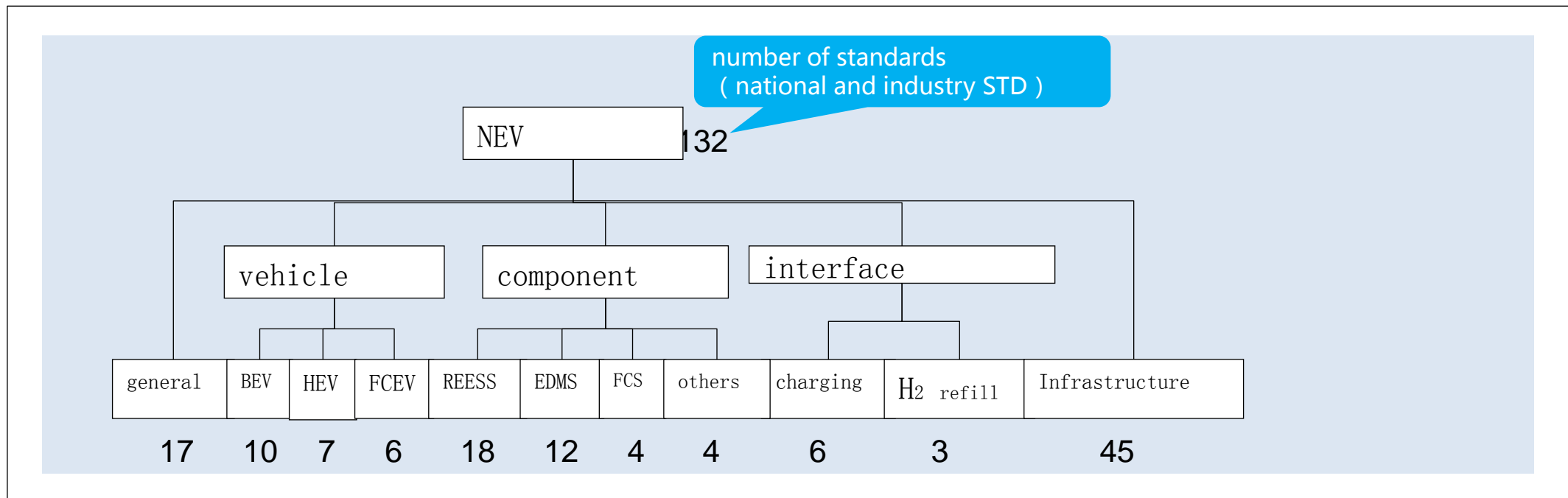
# STANDARDS AND REGULATIONS

This the below figure shows the structure of NEV standard system.

The whole vehicle standard is divide into BEV, HEV, and FCEV.

REESS, EDMS, and FCS are the key of the NEV component, the others component contains DC/DC convert, on-board charger, IGBT and so on.

NEV's energy refill include charging and H2 refill, the infrastructure is the fundamental of NEV application.



REESS: recharging energy electric sub system. EDMS: electric drive motor system. FCS: fuel cell system



## Authorization

- National Passenger Car Quality Supervision and Testing Center
- National testing organization of vehicle product catalogue
- MIIT fundamental public service platform for industrial technology
- Testing organization of China Compulsory Certification (CCC)
- National testing organization of scientific and technical achievement authentication
- Testing organization of the fuel consumption of road transport vehicles
- Testing organization of the safety qualification of operating coaches



## Testing business

- C-NCAP
- Mandatory test and type-approval test of the products in the national vehicle catalogue
- National quality supervision and inspection of the vehicle and component products
- CCC testing of whole vehicle and component
- Testing of environment-friendly product certification
- Testing of national scientific and technical achievement authentication
- Testing of voluntary product certification (C-ECAP, C-GTRA, EV-TEST, PHEV-RATING etc.)
- Testing entrusted by corporations
- Testing of vehicle and component R&D verification
- Testing of vehicle and component export certification

# TESTING AND INSPECTION

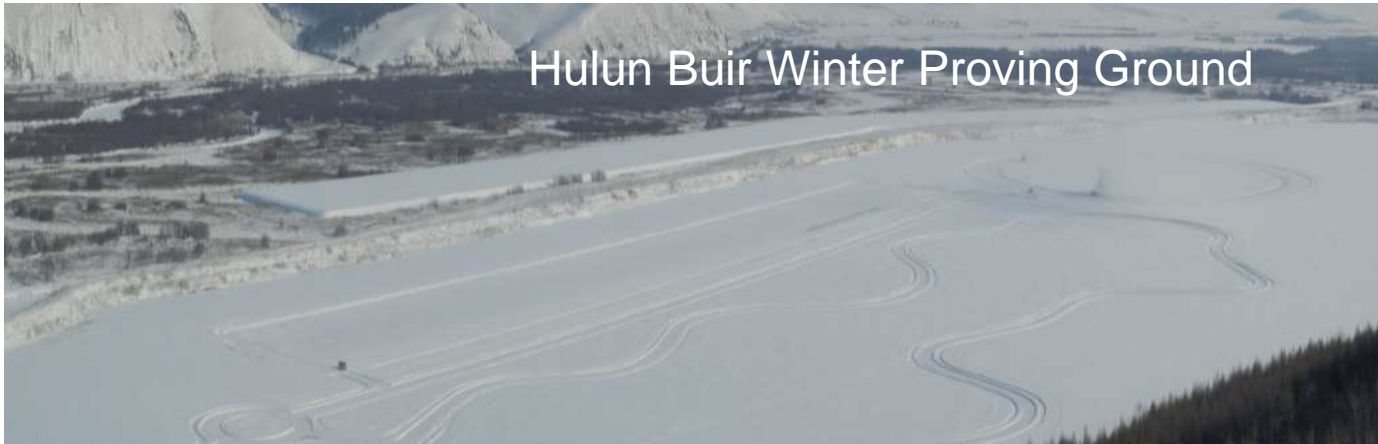


## Yancheng Proving Ground



Largest 3<sup>rd</sup> party proving ground with the most complete facilities and most advanced technical specifications in China

## Hulun Buir Winter Proving Ground



The winter proving ground has various terrains and the most complete testing items

## EMC lab



The most advanced EMC chamber for whole vehicle and key components

The climatic chamber can simulate the highest altitude in the world

## Light-duty vehicle emission lab



## Vehicle safety lab



The lab conducts the most vehicle crash tests per year in the world

Focusing on the development of the automotive industry, CATARC provides holistic certification services covering the entire automotive industrial chain to the customers.



## China Compulsory Certification (CCC)

Certification coverage

- Vehicle (only pure EV)
- Seatbelt
- Horn
- Brake hose
- Exterior lighting and signal device
- Indirect vision device
- Interior trimming
- Door lock and maintaining parts
- Fuel tank
- Seat and headrest
- CRS



## Voluntary product certification



PHEV Green Rating



China Green Tyre Rating  
Assessment  
(C-GTRA)



## Quality management certification



ISO9001



ISO14001



OHSAS18001



## Service certification



Product after-sales service certification  
(maintenance and repair service)

CATARC has released the C-NCAP (China New Car Assessment Program) since 2006, which has substantially enhanced the vehicle safety technologies and improved the road traffic safety in China.

C-NCAP has become the weathervane of auto product safety R&D in China and the symbol of auto safety.



In the past 11 years, we've spent USD 27 million buying the testing vehicles

In the past 11 years, we've done over 1,000 crash tests covering 383 vehicle models

In the past 11 years, we've released 5 versions of assessment protocols



C-ECAP is a corporate voluntary product certification program documented at CNCA, which is based on the ecological design concept and offers the comprehensive assessment on the healthiness, energy saving and environment-friendliness of the vehicle product. C-ECAP aims at leading the ecological growth of the auto industry, conveying the green consumption concept and building the brand of ecological design.

C-ECAP was officially launched on July 1, 2015 and has finished the ecological assessment of 26 vehicle models from 19 OEMs in 7 batches.



## Visions

- Build the world class assessment brand
- Enhance the vehicle ecological level
- Promote the industrial transforming and upgrading
- Advocate green vehicle consumption
- Support the sustainable development of mobility

CCRT (China automotive Consumer Research and Testing center) is a scientific and holistic auto product assessment system that is created by CATARC based on our own consumer research experience and testing capabilities.



Consumer  
assessment



Testing  
assessment



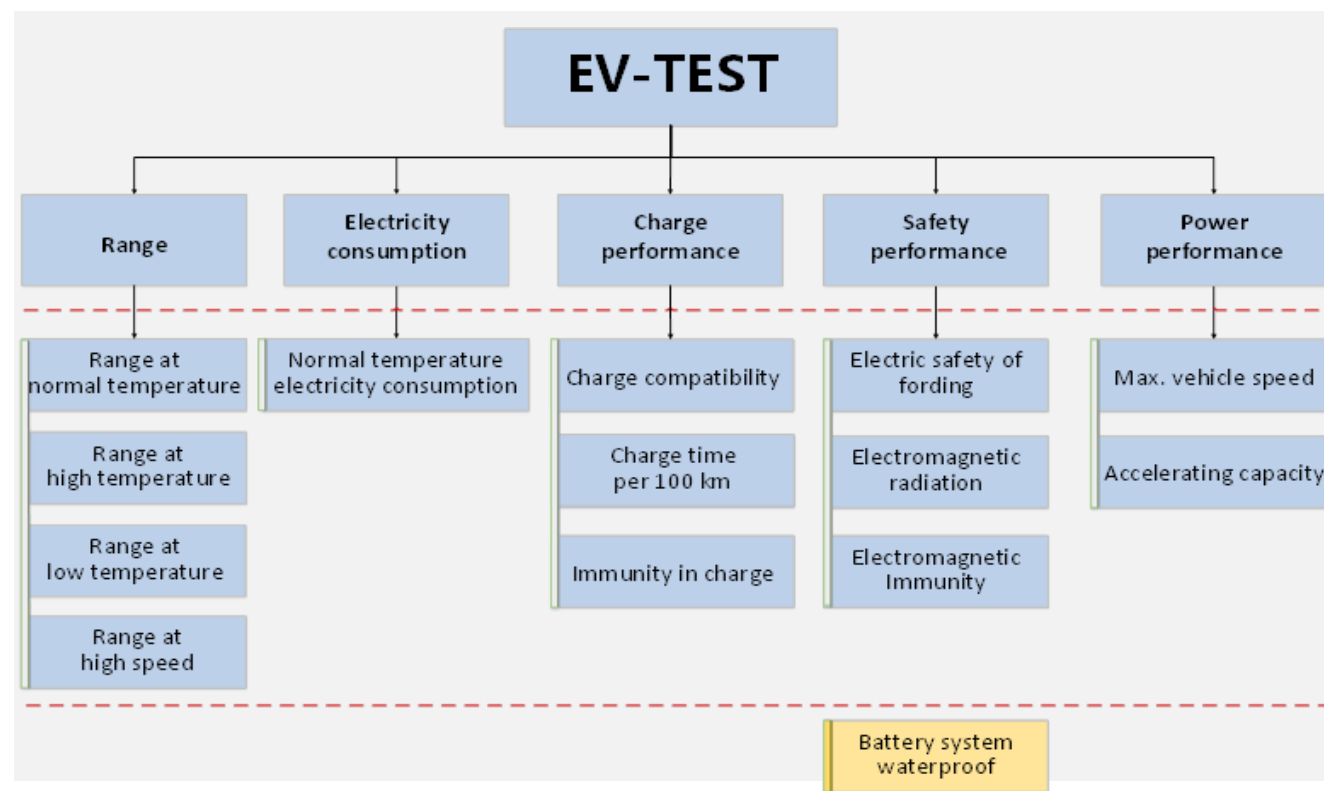
CCRT assists OEMs  
plan and develop  
their products

Guide the consumers  
to get to know the  
products correctly  
and make reasonable  
consumption

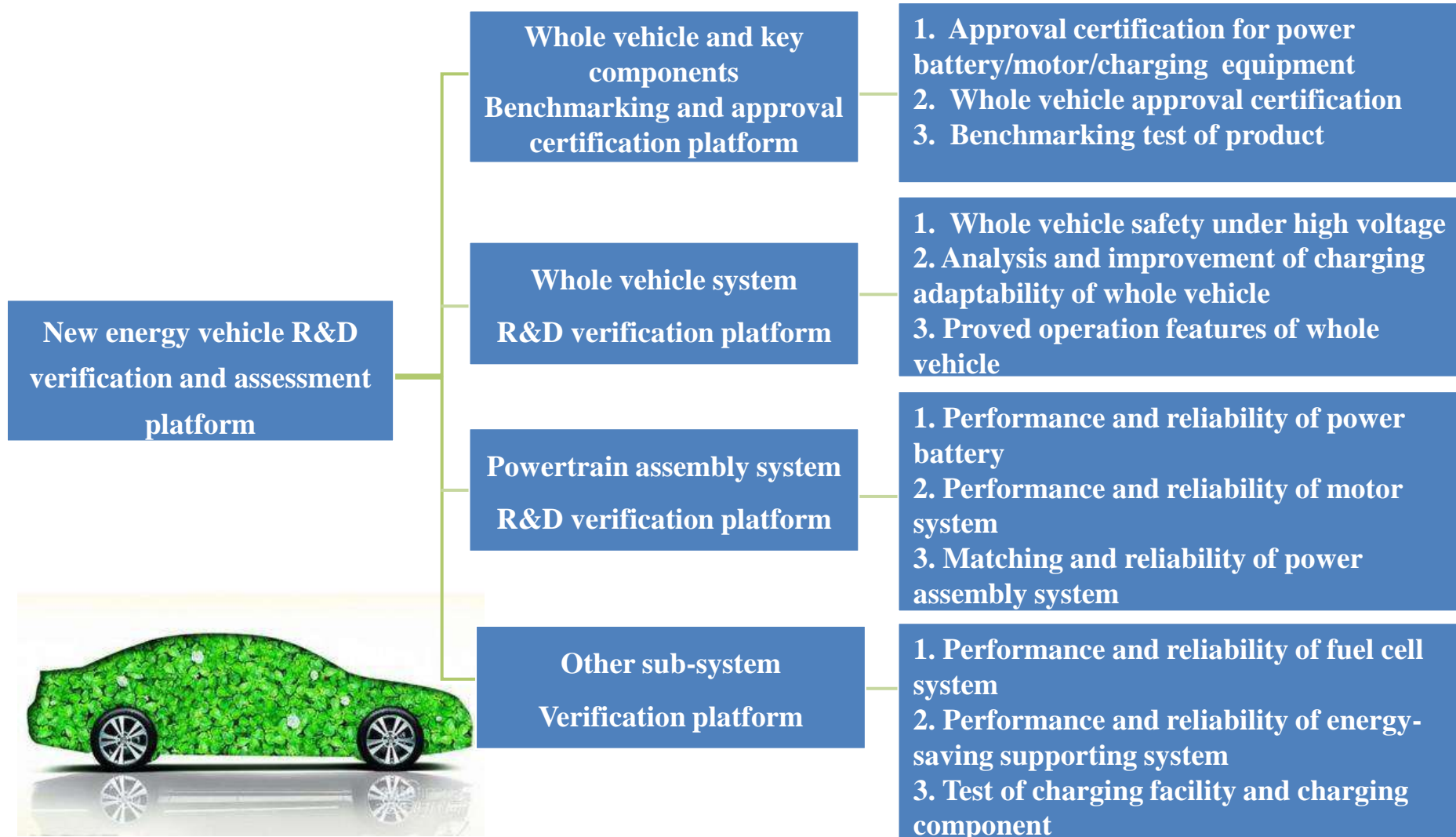
decisions

The consumers' concerns are just our concern. Therefore, we have built the independent, impartial and high-standard EV performance test (EV-TEST) system in order to create the EV assessment brand. Via this test, we wish to promote green consumption, urge the NEV corporations to make technical progress and enhance the healthy and sustainable development of the industry.

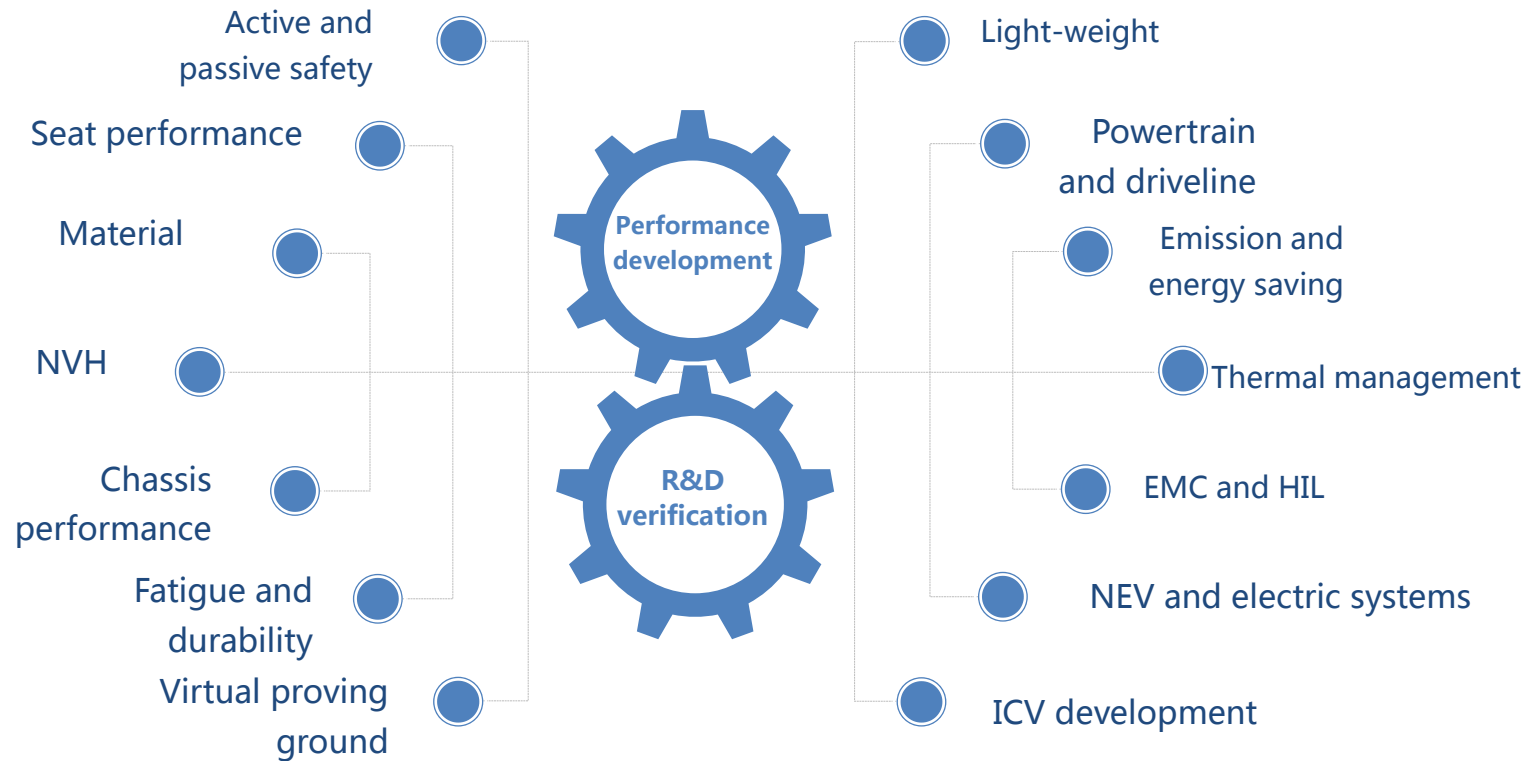
- ◆ *Based on real data*
- ◆ *Reflect the vehicle performance during actual driving*
- ◆ *Give the consumers the most authentic basis for vehicle purchase*



## New Energy Vehicle Testing Capability



“Performance development” and “R&D verification” are our two essential brand features. Our businesses cover various fields as active and passive safety, EMC, HIL test, low-speed crash study etc.



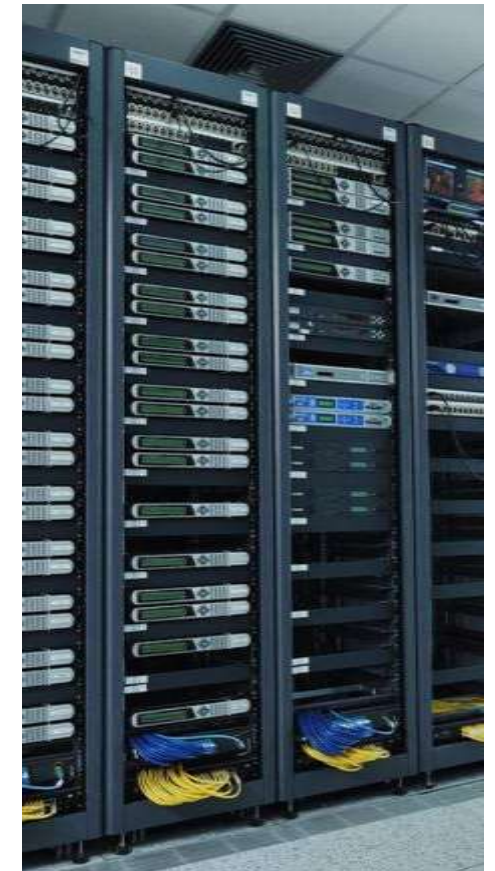
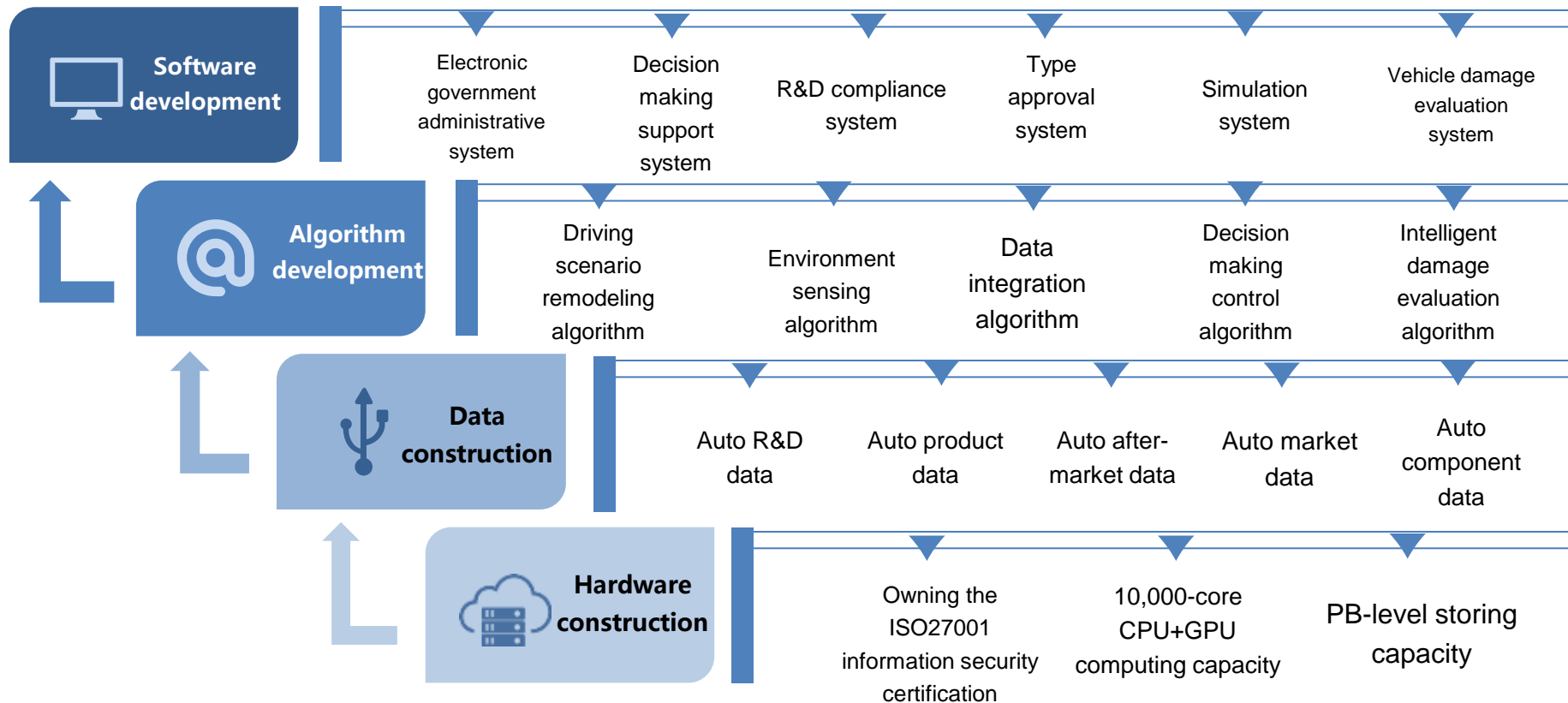
comprehensive performance development lab



# BIG DATA



To provide better service to the industry, CATARC ADC (Automotive Data Center) strives to become the national-level data center for the automotive industry. We wish to lead the revolutionary progress featuring “big data” and “artificial intelligence” in the auto industry with hardware as the assurance, data construction as the foundation, algorithm development as the core and software development as the tool.



**CATARC owns an engineering company with over 30-year experience in engineering design and project management.**

## Main qualifications

- Class A engineering consultation
- Class A machinery industry design
- Class A architecture engineering design for the construction industry
- Class A engineering and equipment general contracting and project management
- Class A project supervising
- GC2 and GC3 pressure pipeline design

## Business scope

- Engineering design management and general contract
- Equipment manufacturing
- Building of manufacturing management IT system



**FJ MOTOR YUDO NEV plant**



**SGMW vehicle R&D center**

Adhering to the principles of “independent and the 3<sup>rd</sup> party”, we stick to the concepts of “scientific, rigorous, objective and impartial” and provide high-quality vehicle forensic research and authentication service to the society. Meanwhile we have the businesses as the study on the theory and technology of vehicle forensic authentication, CIDAS (China In-depth Accident Study), traffic accident prevention solution research, training and consultation service etc.



## Main areas of authentication

- Vehicle characteristics (performance, structure, configuration, etc.)
- Vehicle quality and accidents caused by poor quality
- Vehicles damaged in traffic accident
- Powertrain and components
- Traffic accident investigation
- Trace investigation (for traffic accident only)



# CONSULTATION SERVICE



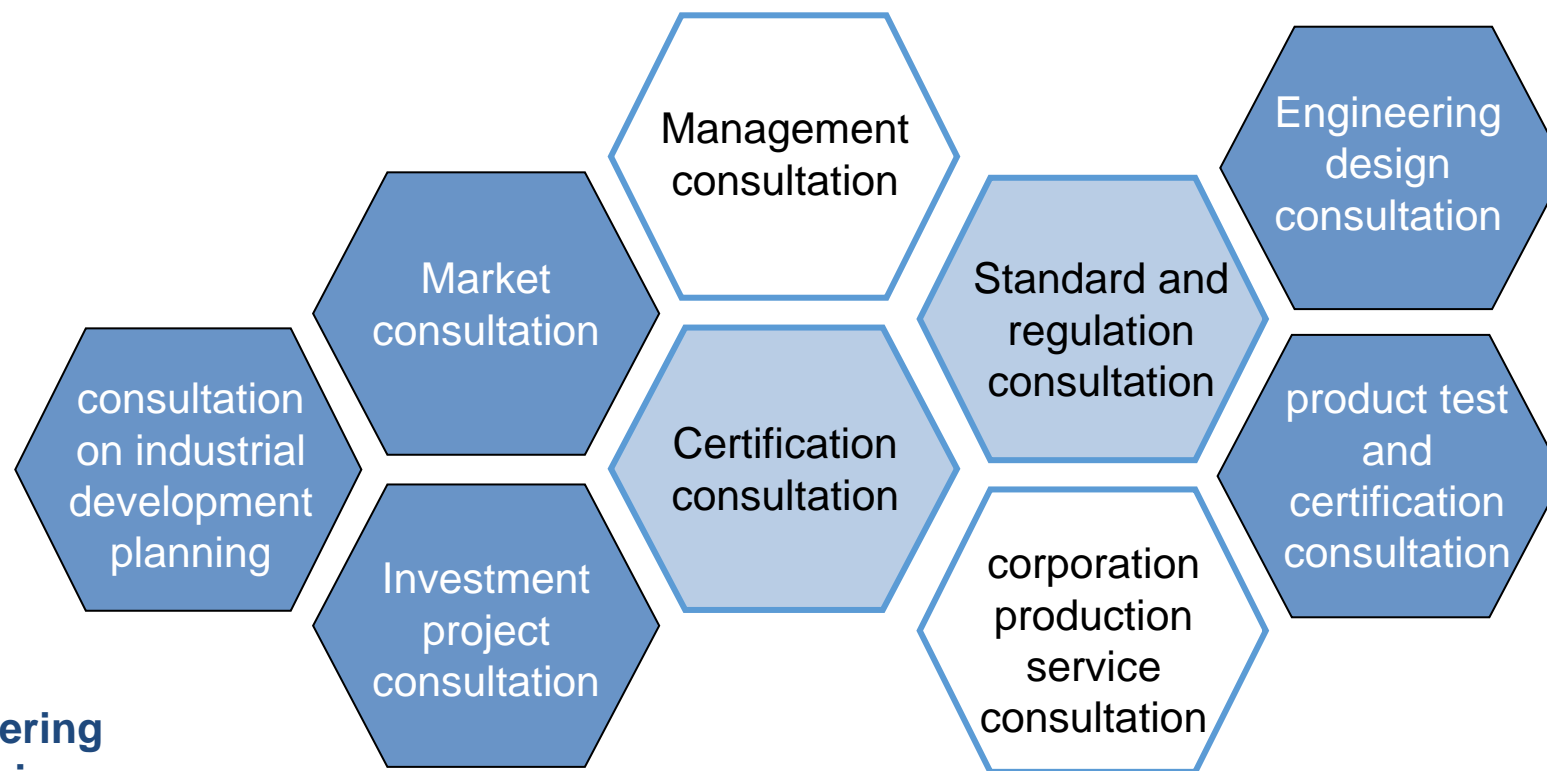
Focusing on the automotive industry development, we provide the all-round consultation service covering the entire auto industrial chain to the customers.



**Auto industry development**



**all-round consultation service covering  
the entire auto industrial chain**

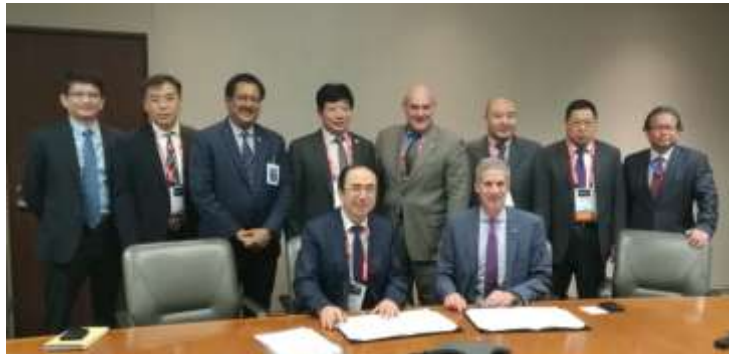




# INTERNATIONAL COLLABORATION



We maintain long-term collaboration partnership with the research institutes, industrial organizations, OEMs and suppliers in the countries with advanced automotive industry in North America, Japan and Europe.





*Part Three*

# **China ASEAN Automotive Standards and Regulations Research Center**

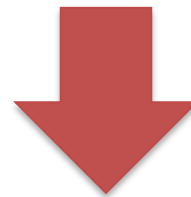
# BACKGROUND

**The year of 2018 is the 15th anniversary of the establishment of strategic partnership between China and ASEAN**

**“The Belt and Road” initiative pushes forward the comprehensive trade cooperation and interconnection between China and ASEAN**



**The cooperations in economy and automotive industry gain a rapid development**



SGMW built a plant in Indonesia

Geely Auto acquired Proton (Malaysia)

SAIC built a plant in Thailand

**More communication and cooperation in technical regulations is needed to support the industrial development in both sides**

**China ASEAN Automotive Standards and Regulations Research Center was established in China in March 2018.**

**Establish a platform for communication, research and cooperation between China and ASEAN in the field of automotive standards and regulations, certification and testing, to facilitate mutual development of automotive industrial technologies in China and ASEAN.**

## Positioning

## Target

- ◆ **Promote information exchange on auto standards and regulations**
- ◆ **Promote harmonization and cooperation on international regulations**
- ◆ **Conduct joint research and formulation of regulations in key areas**
- ◆ **Exchange and cultivate internationalized talent**

**Advance of  
industrial  
technologies**



## 1.1 Exchange of information about regulations

Exchange standards information and related materials:

- Standards system and trends
- Certification system and trends;
- Text and translated version of policies and regulations;
- Participate in local standardization meetings and activities;

## 1.2 Exchange of information about regulations

- China-ASEAN International Symposium on Auto Technical Regulations
- China-ASEAN Cooperation Dialogue on Automotive Standards and Regulations
- Exchange visits between the regulation and certification authority or institute in China and ASEAN
- Communication in automotive regulations on international conferences such as APEC

## 2. International regulations Harmonization and cooperation

- UN WP.29:  
UN Regulations/UN GTR
- ISO/IEC Standards

## 3. Joint research and formulation of key regulations

- **Standards and regulations on new energy vehicle** (Electric vehicle, battery, motor and so on)
- Other regulations with common concerns

## 4. Talent exchange and training

Experts dispatched to the other side for communication, training and study:

- Short term (within 1 month)
- Medium term (1-3 months)
- Long term (over 3 months)

## 5. Communication and cooperation in other fields

- Testing and verification
- Auto products certification
- Policies of automotive industry



No.	Item	Unit
1	Government authorities for guidance	Ministry of Industry and Information (MIIT) Standardization Administration of China (SAC)
2	<b>Initiator</b>	<b>China Automotive Technology &amp; Research Center Co., Ltd. (CATARC)</b> <b>SAIC-GM-Wuling Automobile (SGMW)</b>
3	Major members	GELLY Automobile Co., Ltd.(GELLY) Anhui Jianghuai Automobile Group Corp., Ltd. (JAC) Shanghai Automotive Industry Corporation Group (SAIC) Shenzhen BYD Auto Co., Ltd. (BYD) Beijing Electric Vehicle Co., Ltd. (BAIC BJEV) Dongfeng Xiaokang Automobile Co., Ltd. etc



中国汽车技术研究中心有限公司  
China Automotive Technology and Research Center Co., Ltd.

**Piloted by Science and Technology, Oriented to the Industry,  
Driven by Innovation and Focusing on Green Development**

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**<http://www.catarc.ac.cn>**

