



Current Status and Future Development of EV Standardization in China

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CATARC

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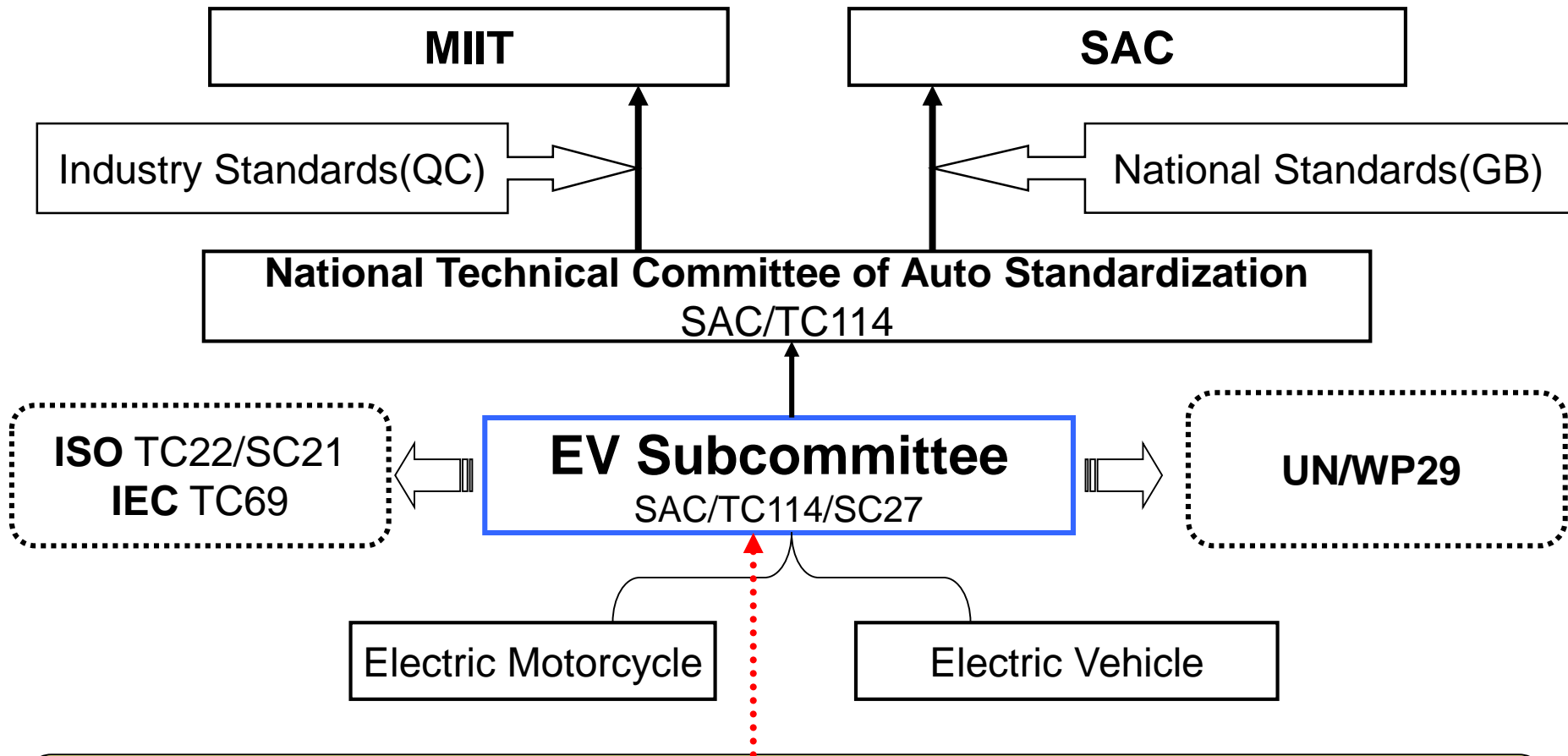
Content

1, Organization and History Evolution

2, Current Status

3, Future Development

EV Standardization Organization



- ★ Secretariat Located in CATARC
- ★ Under the Guidance of MIIT and SAC
- ★ Correspond to ISO TC22/SC21 and IEC TC69



History Evolution



March, 1998

Establishment of 1st EV subcommittee

30 formal committee members

Chairman:

Wang Binggang (Then President of CATARC)

Secretary General:

Sun Hui (Then Vice Chief Engineer of ASRI in CATARC)

July, 2003

Establishment of 2nd EV subcommittee

35 formal committee members

Chairman:

Zhao Hang (President of CATARC)

Secretary General:

Wu Zhixin (Then Director of EV Center in CATARC)



History Evolution



August, 2008

Establishment of 3rd EV subcommittee

33 formal committee members

Chairman:

Wu Zhixin (Then Director of EV Center in CATARC)

Secretary General:

Zhao Jingwei (Then Vice Chief Engineer of ASRI in CATARC)



January, 2014

Establishment of 4th EV subcommittee

51 formal committee members

Chairman:

Wu Zhixin (Vice President of CATARC)

Secretary General:

Zhou Rong (Chief Engineer of ASRI in CATARC)

History Evolution

SCOPSR 49th Document in 2010

“Notice of Duties Segregation among The offices Administrating Electric Vehicle and Infrastructure”

SAC Take the Lead



MIIT

NTCAS

EV Standardization

Subcommitte



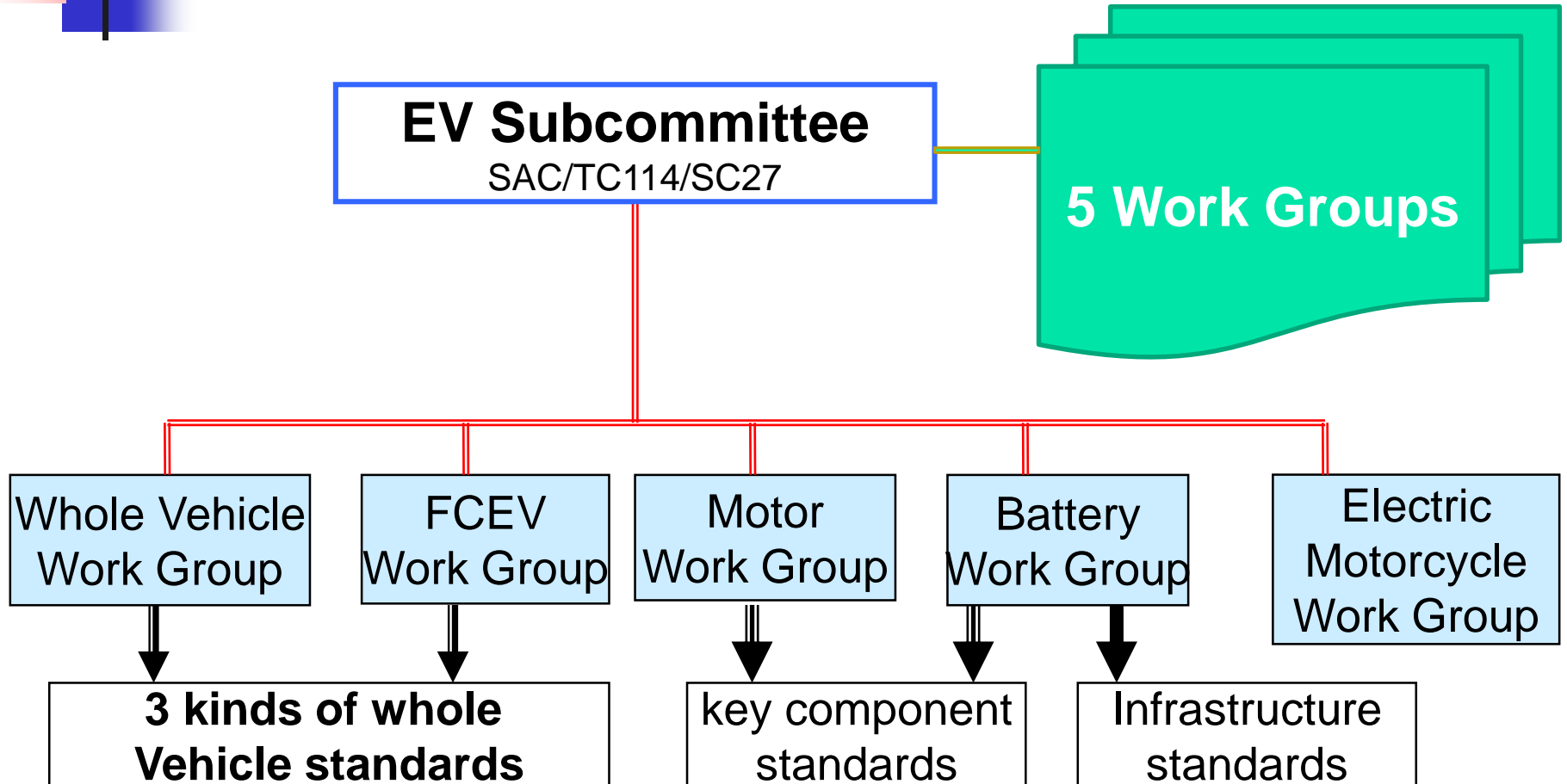
NEA of NDRC

EV Infrastructure

Standardization

Subcommitte in CEC

Structure of EV Subcommittee





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Principle and Goal of Standardization

EV Standardization

- Support Government Administration
 - Market Entry
 - Market Administration

} **Type Approval and Testing**

- Regulate Industrialization
 - Improve Quality
 - Lower Cost

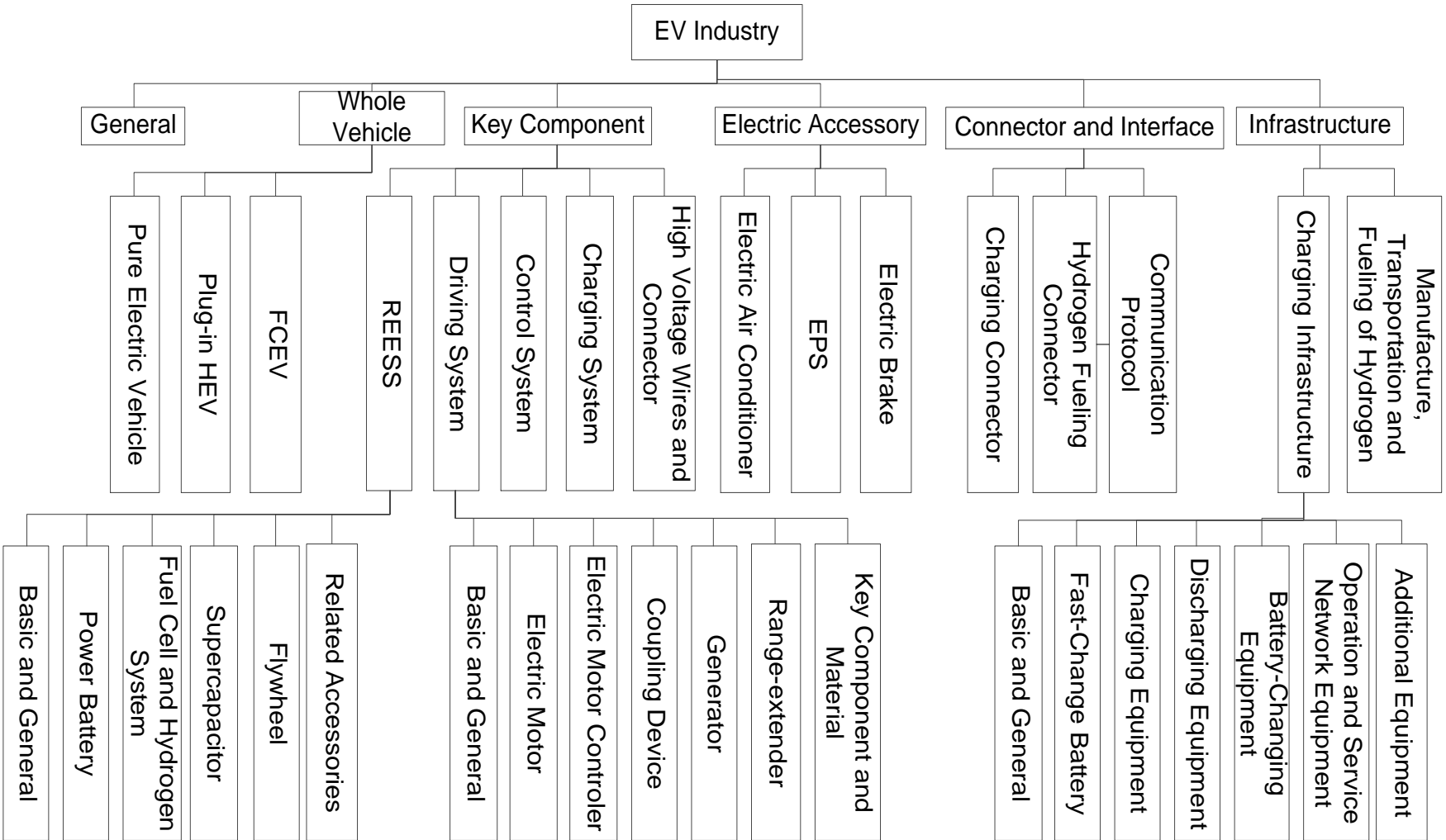
} **Technical Requirement and interchangeability**

- Facilitate Commercial Promotion
 - Unified Interface
 - Charging Station Construction

} **Protocol**

- Guide Technical Research
 - New Material, Technology
 - Technical Communication

Structure of EV Standard System





Overview of EV Standards

1, 75 Existing EV Standards:(Except for Electric Motorcycle)

- Basic General Standards: 6 NS, 2 IS
- BEV Whole Vehicle Standards: 7 NS, 2 IS
- HEV Whole Vehicle Standards: 6 NS, 1 IS
- FCEV Whole Vehicle Standards: 4 NS
- REESS Standards: 4 NS, 7 IS
- Driving System Standards: 3 NS, 2 IS
- Fuel Cell System Standards: 3 NS, 1 IS
- Control System: 1 NS
- Infrastructure Standards: 11 NS, 10 IS
- Connector and Interface Standards: 5 NS

(NS: National Standard; IS: Industrial Standard)



Overview of EV Standards

2, 77 Under Development Standards:

- Basic General Standards: 6 NS, 1 IS
- BEV Whole Vehicle Standards: 1 NS, 3 IS
- HEV Whole Vehicle Standards: 4 NS
- FCEV Whole Vehicle Standards: 1 NS
- REESS Standards: 11 NS, 7 IS
- Driving System Standards: 5 NS, 7 IS
- Fuel Cell System Standards: 2 NS
- Control System: 1 NS
- Infrastructure Standards: 19 NS, 9 IS

(NS: National Standard; IS: Industrial Standard)



International Standardization and Harmonization

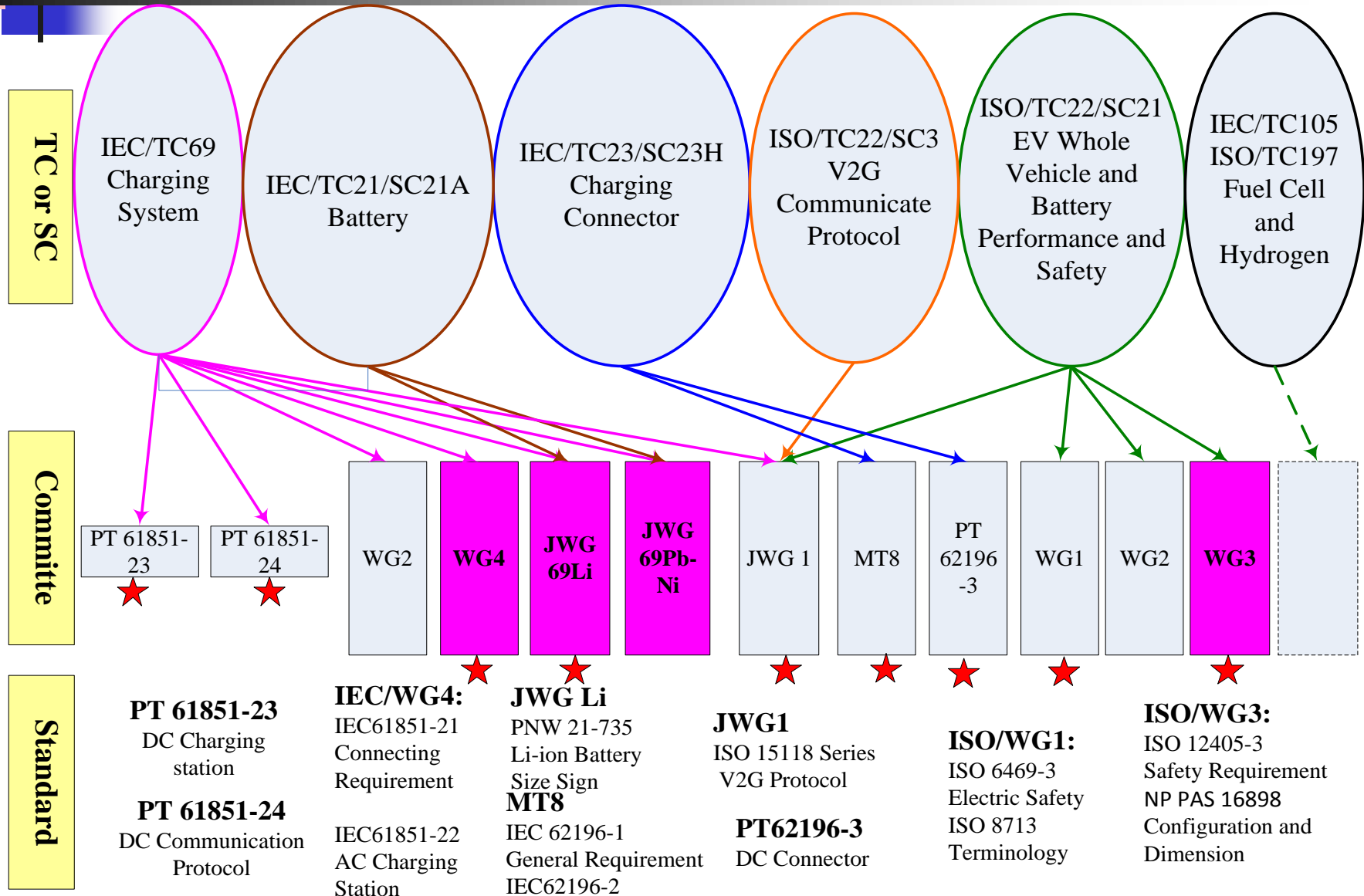
1、 Current International Standard and Regulation

- ◆ WP29: EVS-GTR is under development
- ◆ UN/ECE: 8 ECE Regulation
- ◆ ISO and IEC: 35 Standards (62 planed)

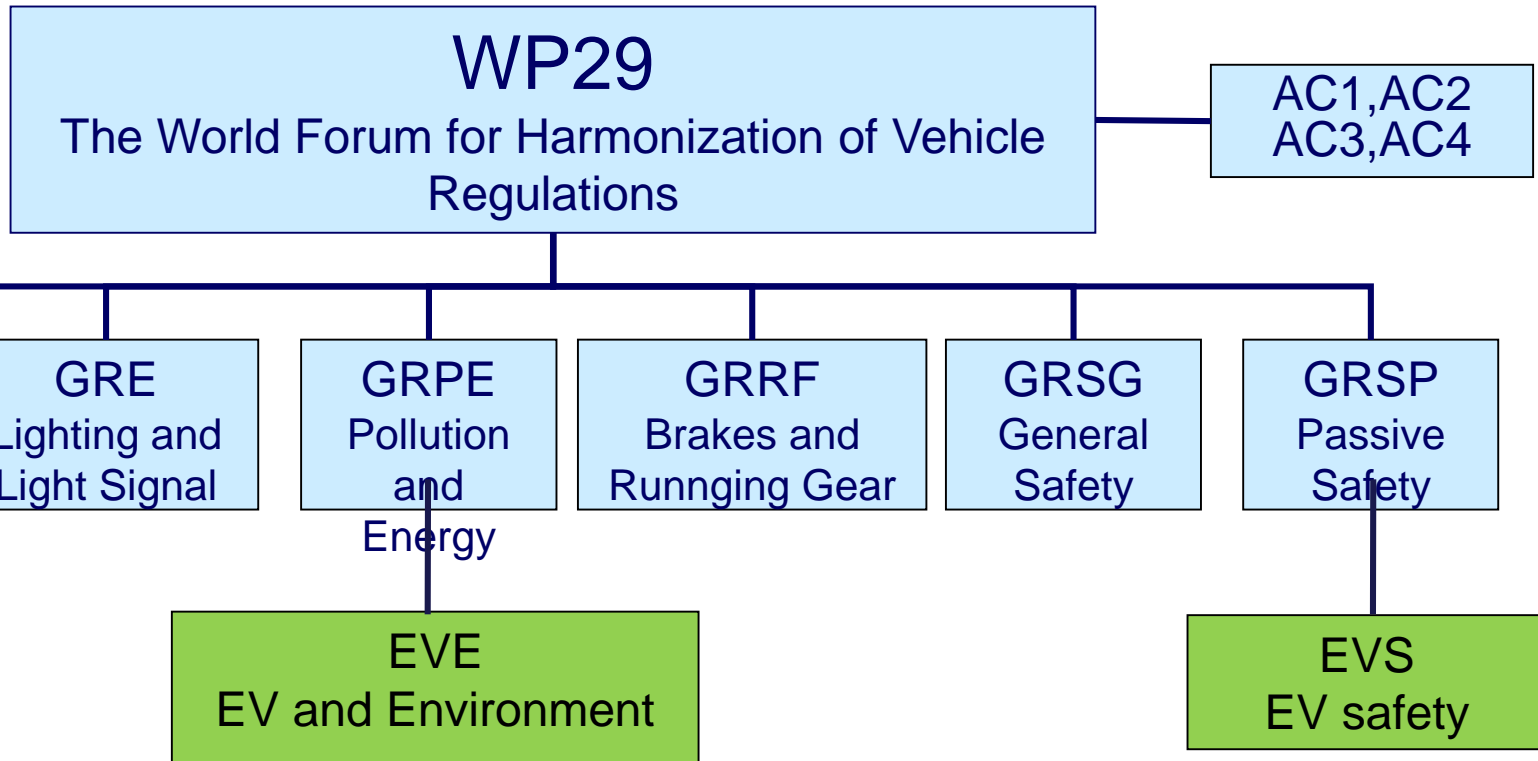
2、 Hot Spot:

- ◆ Electric Safety
- ◆ Charging Interface
- ◆ Power Battery

China's Participation in ISO and IEC



China's Participation in WP29



In March 2012, proposed by China, Japan, America and Europe, EVS and EVE work group were established, China act as vice chairman



Features of China's Standardization Work

1. The EV standard system is reasonable and complete

- Current standards basically fulfill the demand for EV type approval, market entry, scientific research, industrialization and commercialization

2. EV standardization in china started early and development rapidly.

- DC charging proposal was accept as formal part of IEC standards;
- Lead the development of 3 EV battery-changing-plant standards, achieve the zero breakthrough



Features of China's Standardization Work

3. Current EV standards offered important support for government administration, R&D, Industrialization and commercialization

- EV standard were adopted by government, they firmly supported the policies of market entry, subsidy, tax mitigation and etc.
- Formed the foundation of setting up, research and check-accept of national science and technology project.
- Acted as a basic role in research, production, industrialization, commercialization of EV and related infrastructure construction.



Content

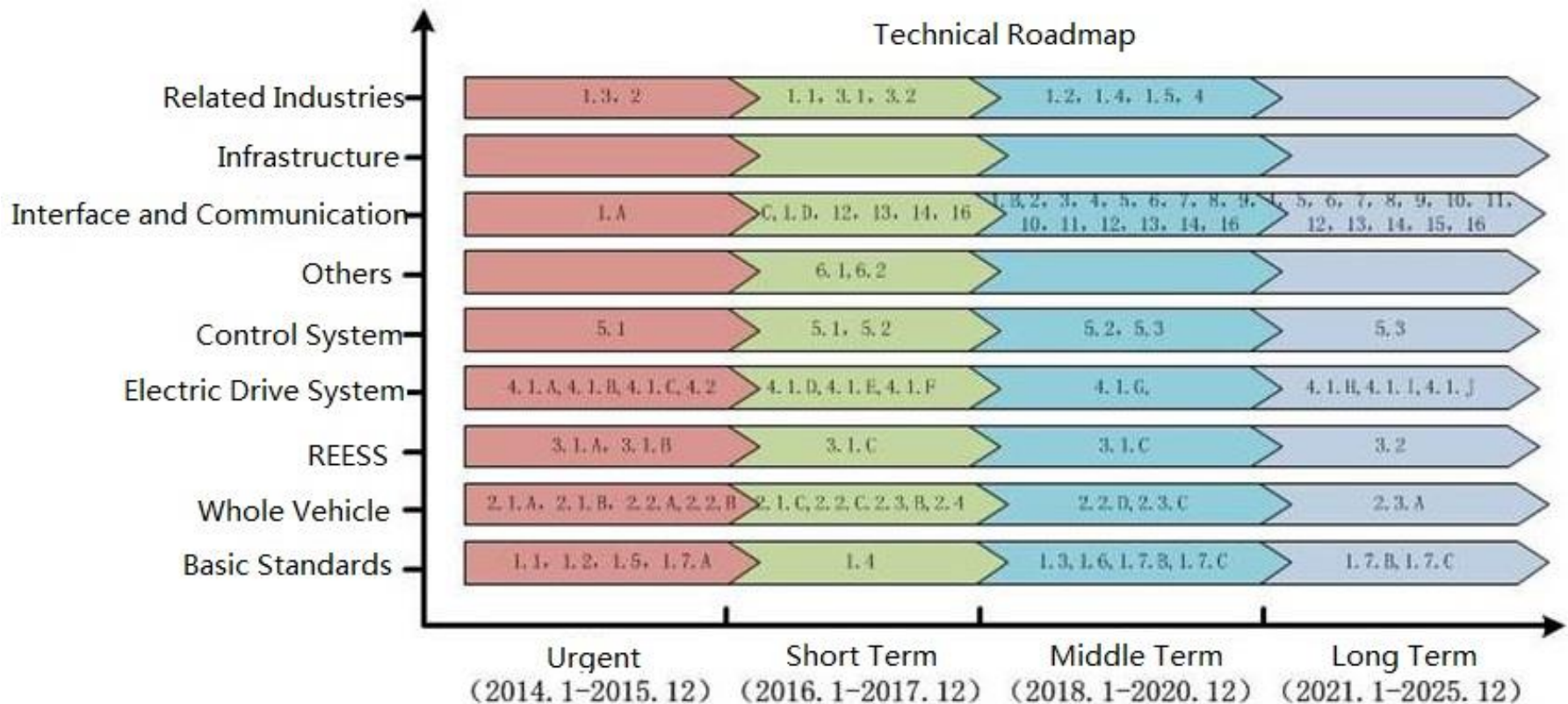
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3, Future Development

- ◆ Top-level Design, Comprehensive Arrangement, Step by Step Implementation
- ◆ Develop China's EV standardization Roadmap





3, Future Development

Expedite Urgent-needed Standards

- ◆ Expedite development of EV typical driving cycle, EMC, FCEV safety requirement related standards for research and industrialization
- ◆ Expedite development of charging connector and communication protocol standards for construction of charging infrastructure
- ◆ Expedite development of power battery standards and plug-in hybrid commercial vehicle specifications standards for market entry



3, Future Development

Enhance International standardization and harmonization

- ◆ Further participate into WP29, ISO and IEC; Endeavour to lead more standard development project
- ◆ Make full use of Sino-Euro, Sino-Germany, Sino-US and Sino-Japan bilateral cooperation to improve China's EV standardization work

3, Future Development

Sino-Germany Cooperation

China: SAC and MIIT

Germany: BMWI

E1 Charging System

E2 Communication Protocol

E3 Crash Safety

E4 Charging Station and Smart Grid

Sino-Europe Cooperation

China: MIIT

Europe: Enterprise and Industry Department

Energy Consumption

- Power Battery
- Energy Consumption Evaluation



3, Future Development

Sino-US Cooperation

China: MOST

US: DOE

Advance Battery Research

EV Energy Consumption Analysis

EV Demonstration Running

EV Standard and Evaluation Method Research



3, Future Development

Sino-Japan Cooperation

China: CATARC

Japan: JARI

Power Battery

Charging

Electric Motor

Whole Vehicle



Thanks For Your Attention