



# Chinese Petroleum Equipment Standardization

**Gao Shengping**

**China Petroleum Equipment Standardization Committee  
Standardization Research Institute of Petroleum Industry**

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Course

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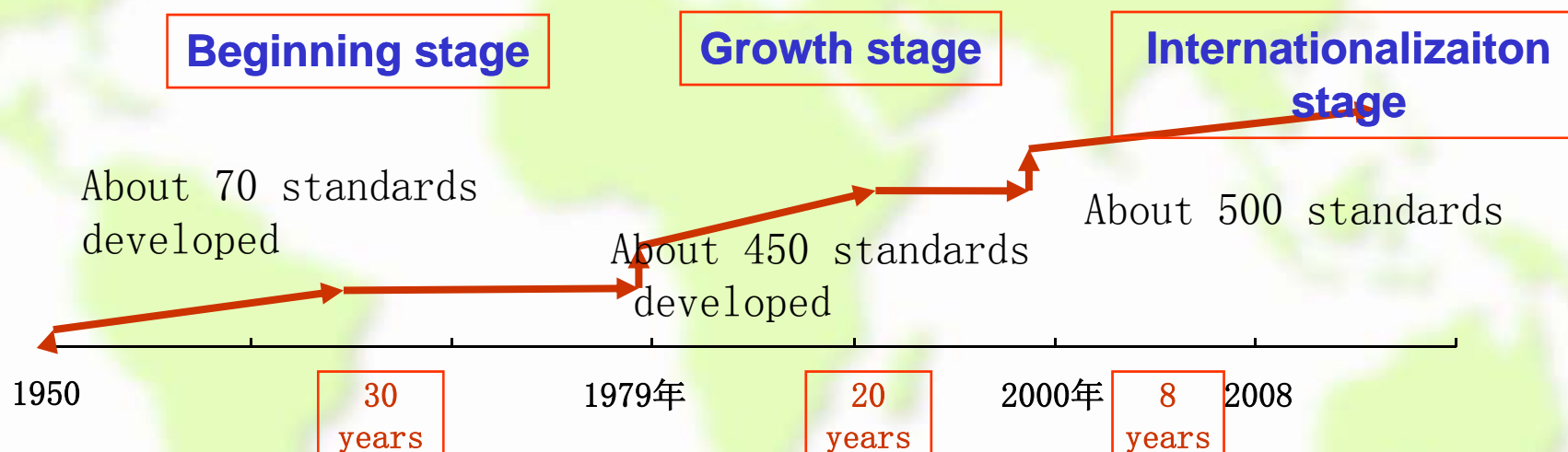
IV Ideas on Petroleum Equipment  
Standardization Development



# I Petroleum Equipment Standardization Development Course



1. Beginning (1950 –1978)
2. Growth (1979 –2000)
3. Geared to international norms (2001— )





# I Petroleum Equipment Standardization

## Development Course



### Beginning Stage (1950~1978)

- ◆ Collect relevant API and former Soviet standards,
- ◆ Develop standards for making parts & spare parts and enterprise standards,
- ◆ In 1958 China started to make petroleum equipment industry standard. By 1979, about 70 standards had been developed.



# I Petroleum Equipment Standardization Development Course



## Growth stage (1979~2000)

- ◆ Standard development responsibility shifted from technical units to standardization committee,
- ◆ China Petroleum Standardization Committee and other relevant standardization committee established,
- ◆ China Petroleum Equipment Standardization Committee established,
- ◆ By 1999, nearly 450 national & industrial standards had been developed and promulgated.



# I Petroleum Equipment Standardization Development Course



## Internationalization Stage (2001~)

- ◆ Petroleum equipment standardization units have been reorganized.
- ◆ Standards development changed from focusing on individual spare parts to focusing on modular and systematic standards.
- ◆ The standards have been geared to international practice and strategy of localizing international standards and internationalizing local standards adopted.
- ◆ About 500 standards have been developed or revised.

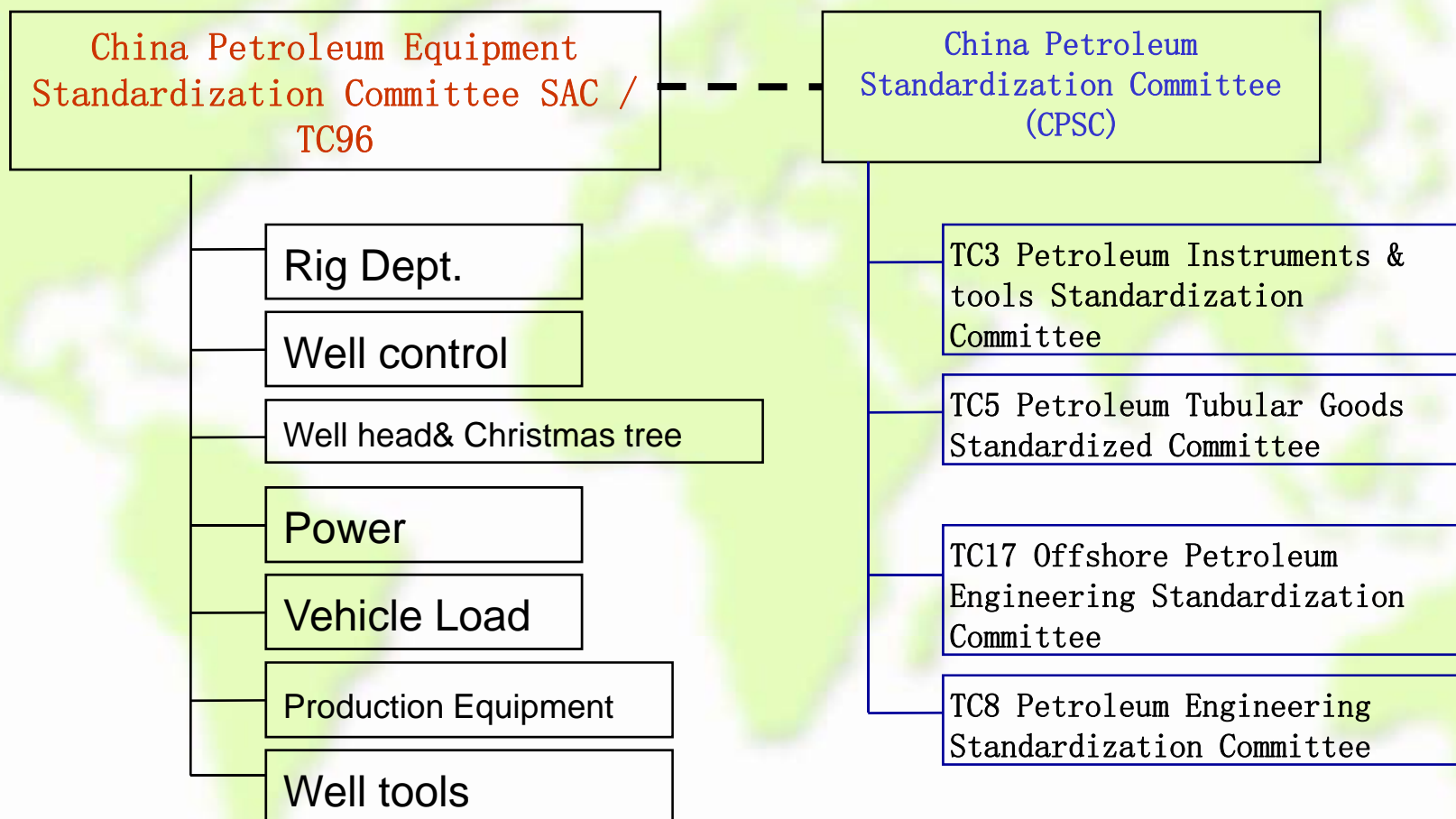


# II China's Petroleum Equipment Standardization



## Organizations and Systems

### 1. Organization

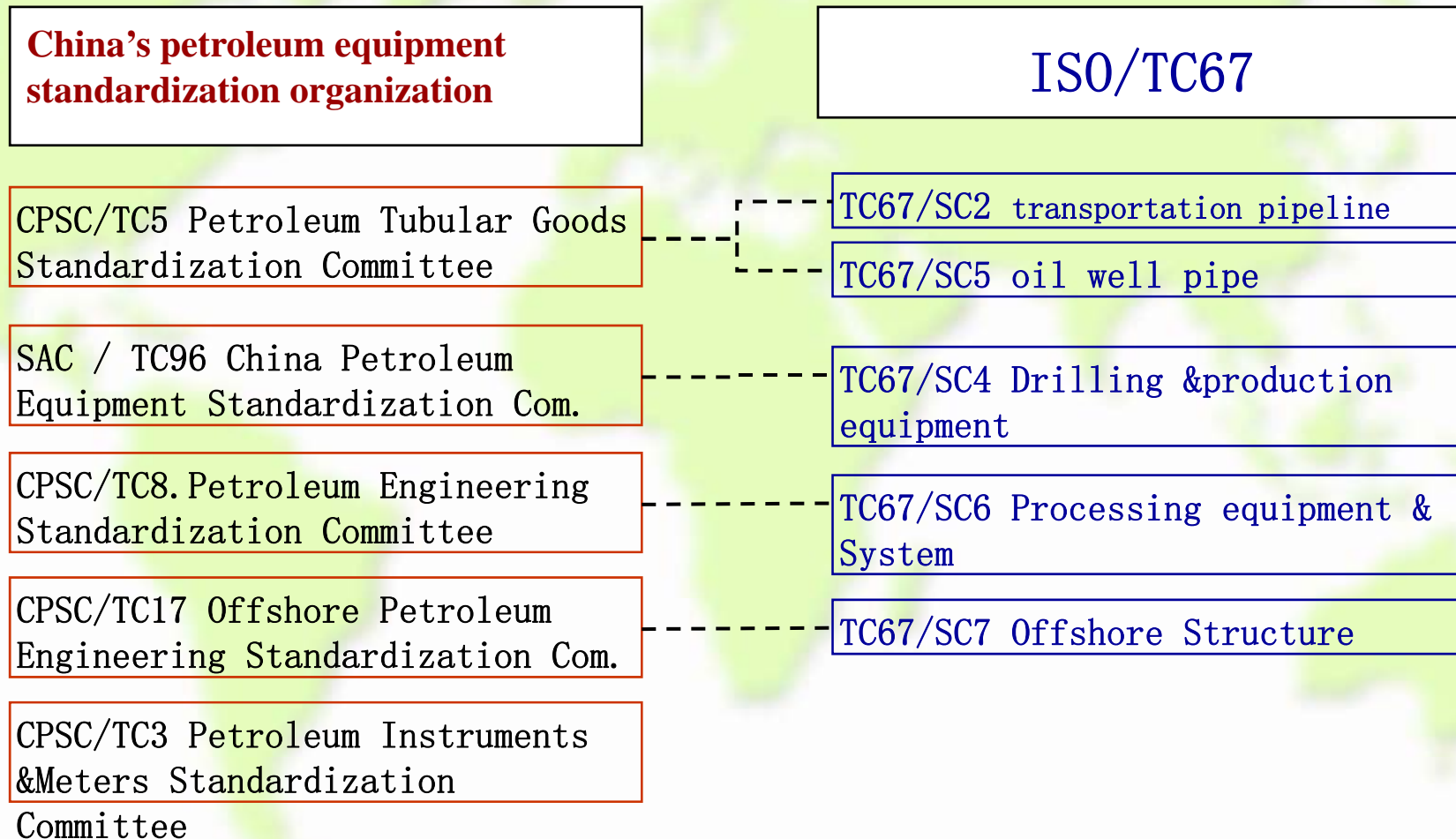




## II China's Petroleum Equipment Standardization Organizations and Systems

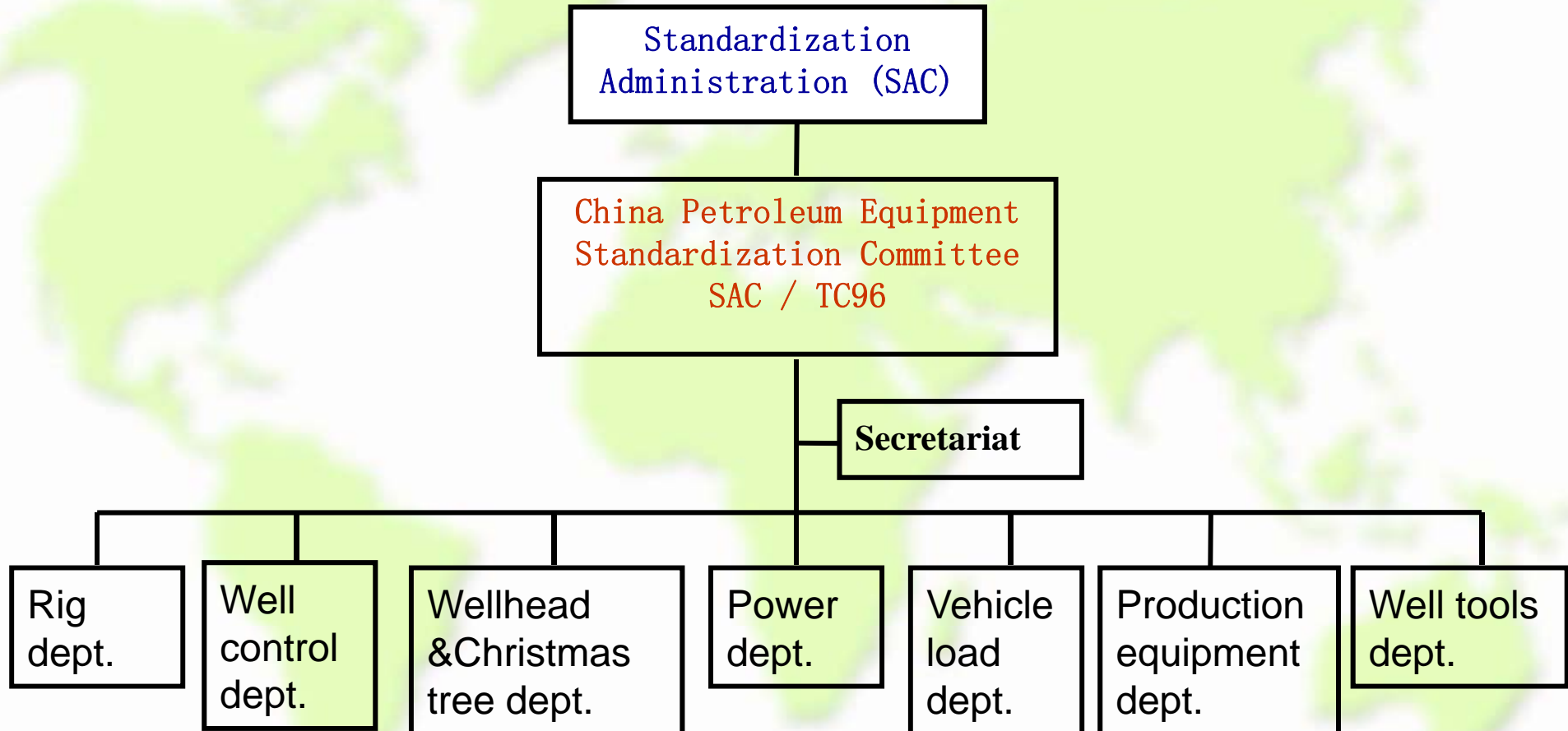


Relationship between China's petroleum equipment standardization organization and ISO/TC67

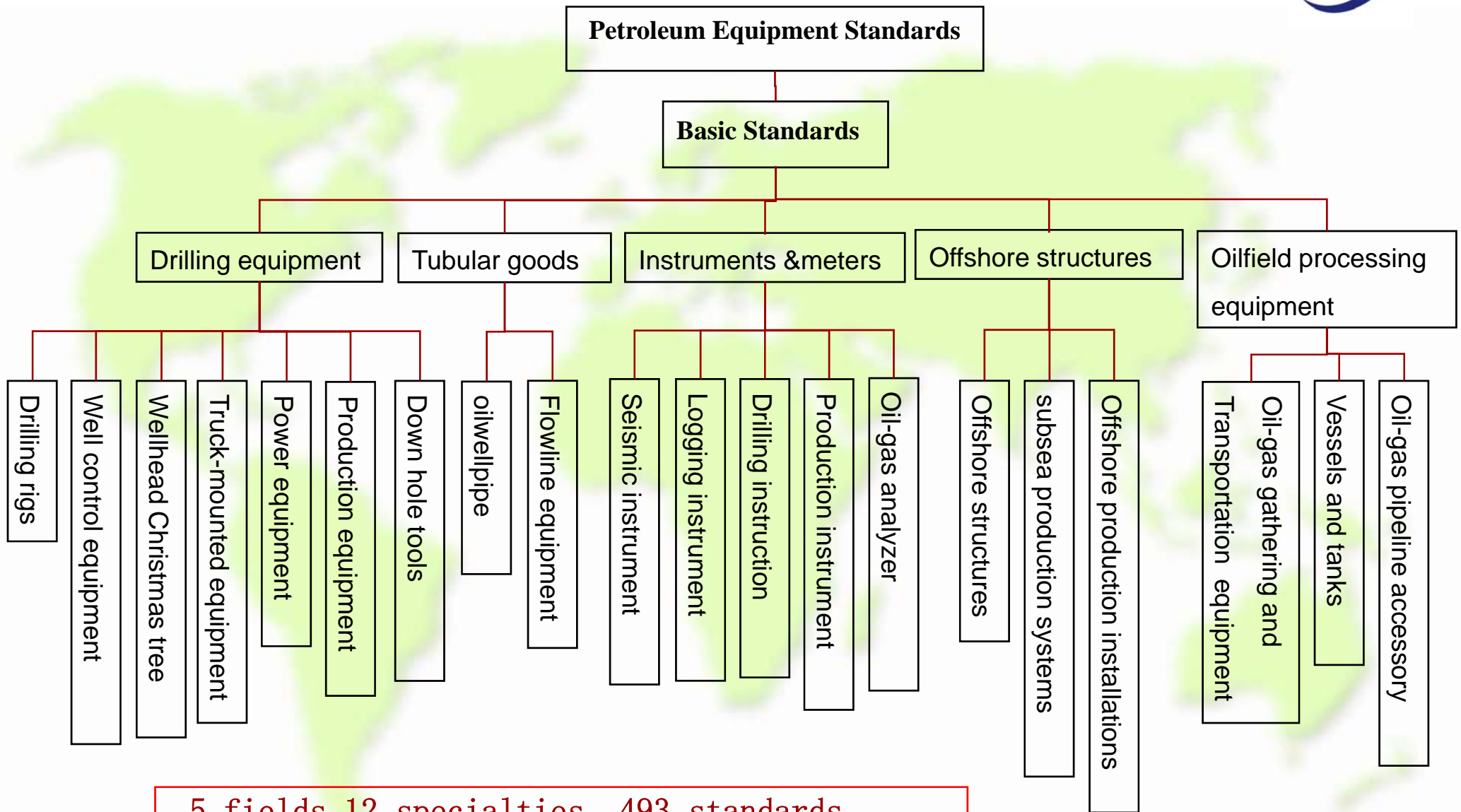




## II China's Petroleum Equipment Standardization Organizations and Systems



# **psc** 2 China's petroleum equipment standards & system





## II China's Petroleum Equipment Standardization Organizations & Systems



### 2. Standards & Systems

Fields	No. of standards	Adoption of ISO	Adoption Of API	Adoption of others	Standard adoption	Percentage (%)
Drilling Equipment	219	16	53	1	70	32
Tubular Goods	94	18	37	1	56	59.6
Instruments & meters	103	—	3	2	5	4.9
Offshore Structure	44	4	22	7	33	75
Oilfield processing equipment	33	—	13	2	15	45.5
Total	493	38	128	13	179	36.3



## III Main Achievement in Recent Years

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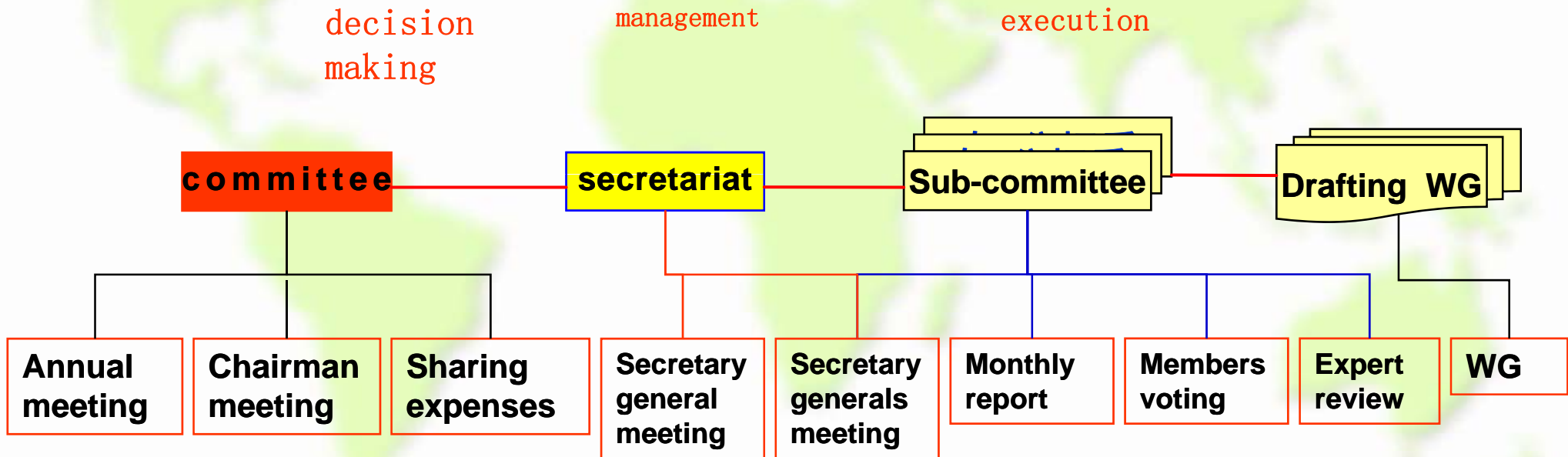
1. Working mechanism focusing on key companies has been created, which facilitates fast & healthy development of equipment standardization

### Challenges:

- ◆ Too many standards need revising & workload is heavy
- ◆ Higher requirement for establishing systematic, application and high quality standards,
- ◆ Manufacturers & users participate actively and demand a more transparent and fair process to reach consensus
- ◆ More coordination work between revision work groups and between technical committees

## Measures taken

- ◆ Management mechanism of holding meetings of secretary general and directors and annual meetings of committees
- ◆ Revision mechanism of proposal review & coordination, drafting, expert review & member voting





## III Main Achievement in Recent Years

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- ◆ Set up 7 departments headed by key companies in respective field: rigs, well control, well head & Christmas tree, petroleum equipment, etc.
- ◆ Depts help Secretariat conduct research, revision, publicizing & implementation work.
- ◆ Consultation & technical assurance mechanism ensure systematic, applicable & high quality standards and promote fast & healthy development of standardization work in China.



## III Main Achievement in Recent Years

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2. Strengthen research on standards to ensure systematic & complementing standards

- 1) Standard systems of rig, well control, tubular goods, etc. researched & developed
- 2) Simplify & optimize existing & to-be-developed standards and arrange them in an organic way to establish scientific systems of standards so as to guide technical committees' development and revision work.

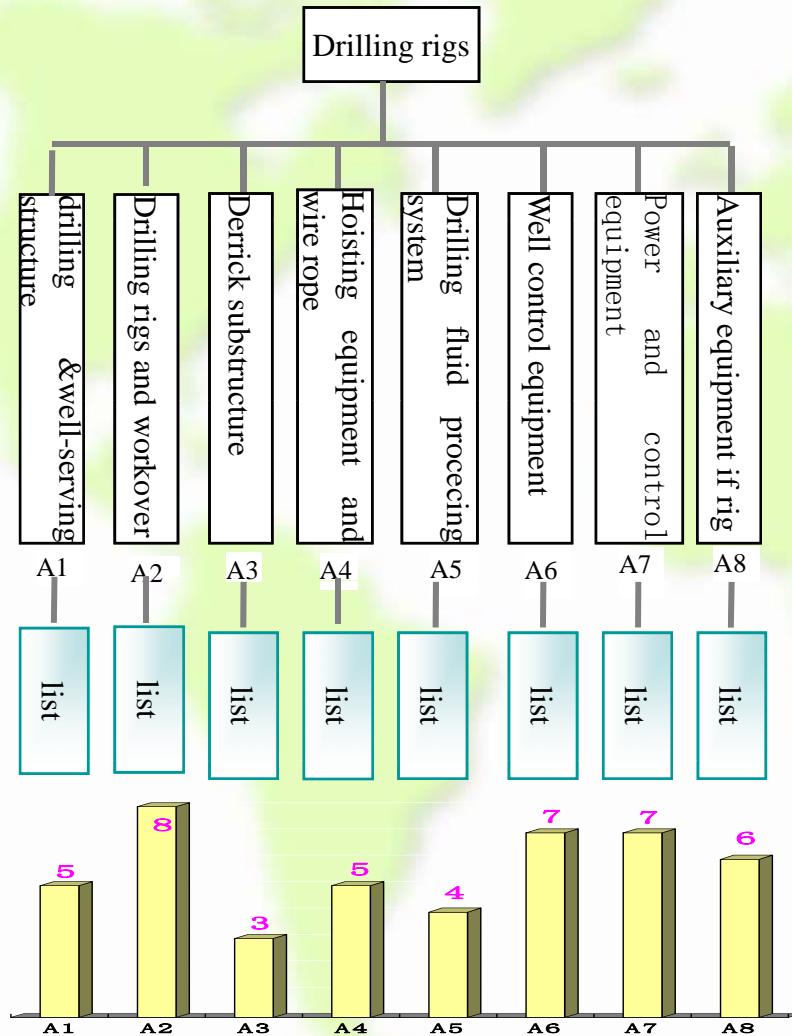


## III Main Achievement in Recent Years



- ◆ Integrate & classify existing standards according to product function
- ◆ Raise proposals on standardization of main petroleum equipment
- ◆ Incorporate new technology & products into standards
- ◆ Adopted many ISO & API standards

## Research on Rig Standard System



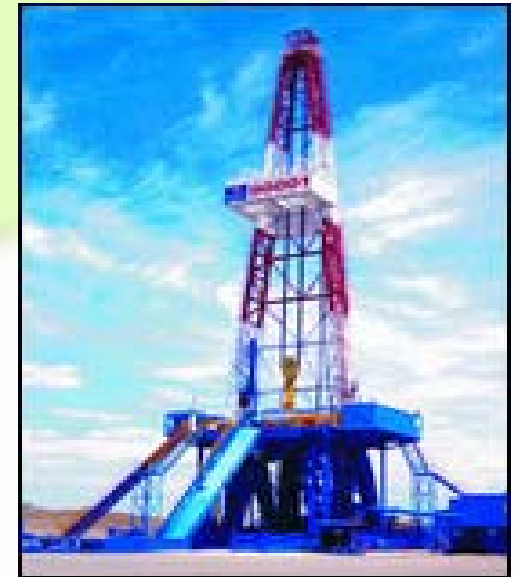
Rig standard system is divided into 8 categories with 45 standards (inc. national standards), 32 fewer than original rig standards

The 45 standards includes 12 core one & 33 supporting ones. 19 are identical or revised edition of ISO or API standards. Adoption rate: 42.2% .

It covers main aspects of rigs and can meet the requirement of design, production, use & maintenance.

Through the research:

- ◆ 1. Core standards like Configuration of Petroleum Rigs, Technical Specification of Rig, Electrical Equipment Specification in Rigs are developed by taking hoisting system, power & transmission system, well control system and drilling fluids cycle system and auxiliary equipment as one big system so as to meet the requirement of modular design, production and inspection.



◆ 2. Follow international standards and adopted advanced and systematic ISO & API standards.

e.g., ISO 13535 Drilling & Production Hoisting Equipment Specification,

ISO 13522 Drilling, Production and Drill-through Equipment,

API 7k Drilling and Well Servicing Equipment Specification, etc.



## III Main Achievement in Recent Years

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- ◆ 3. Developed Top Driving Device in Petroleum Rigs and other standards on new technology & equipment
- ◆ 4. Reduce No. of standards from 77 to 45 so as to make standards more comprehensive and complementing
- ◆ 5. Put forward requirement on testing & control technology for rig design, manufacture & use regarding safety, energy conservation & environmental protection.



## III Main Achievement in Recent Years



3. Actively follow, research & adopt international standards to promote internationalization of China's petroleum equip.

◆ Follow, translate, analyze and convert ISO & API standards. 179 have been adopted, accounting for 36.3 of existing standards.

- Key ISO & API standards are analyzed, drafted and issued simultaneously, e.g., ISO 10422 Manufacturing, measurement and testing of casing, oil pipes and line pipe screw thread, etc.
- Test & convert urgently needed standard and operation guidelines, e.g., ISO 13533 Rigs, production & drill-through equipment
- Selectively use or use after modification standards unsuitable for our laws and regulations



## III Main Achievement in Recent Years

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- ◆ Some standards with our patents & IPR have been formulated to meet the needs of domestic manufacturers. Also international standard proposals were compiled to make technical preparation for involvement in international standard development, e.g., beam pumping unit & top driving device, etc..
- ◆ Bilingual edition of standards development has been conducted and 22 Chinese-English standards formulated including **Diesel coupling set for efficient energy-saving oil drill**, which has supported Chinese engineering team and go-global strategy.



## IV Ideas on Petroleum Equipment Standardization Development

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### Basic Ideas:

With market as orientation, internationalization as goal and information as means, we shall adopt strategy of standard internationalization, actively adopt advanced international standards, promote standardization of new technology & equipment, follow international practice, promote modular development of our oil equipment and improve international competitiveness of our equipment.



## IV Ideas on Petroleum Equipment Standardization Development

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### **Next-step:**

- ◆ Speed up revision of national standards on China's main petroleum equipment
- ◆ Actively adopt international standards and foreign advanced standards
- ◆ Actively get involved in international standards development & revision
- ◆ Continue to develop Chinese-English bilingual standards
- ◆ Further conduct international exchanges & cooperation

谢谢！

Thanks !

