

Recent Developments of NIM

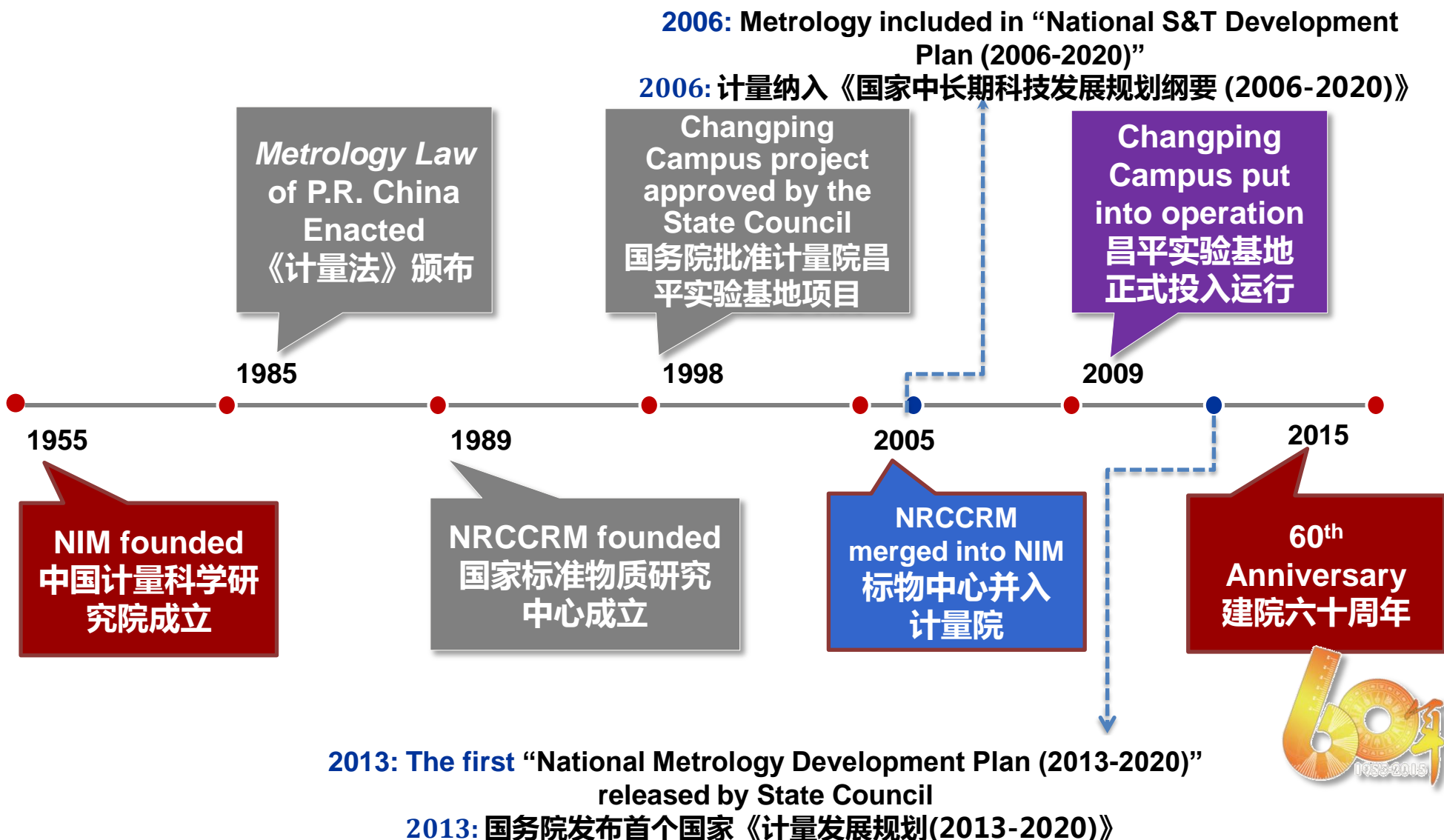
中国计量科学研究院最新进展

sep, 2017 2017年9月

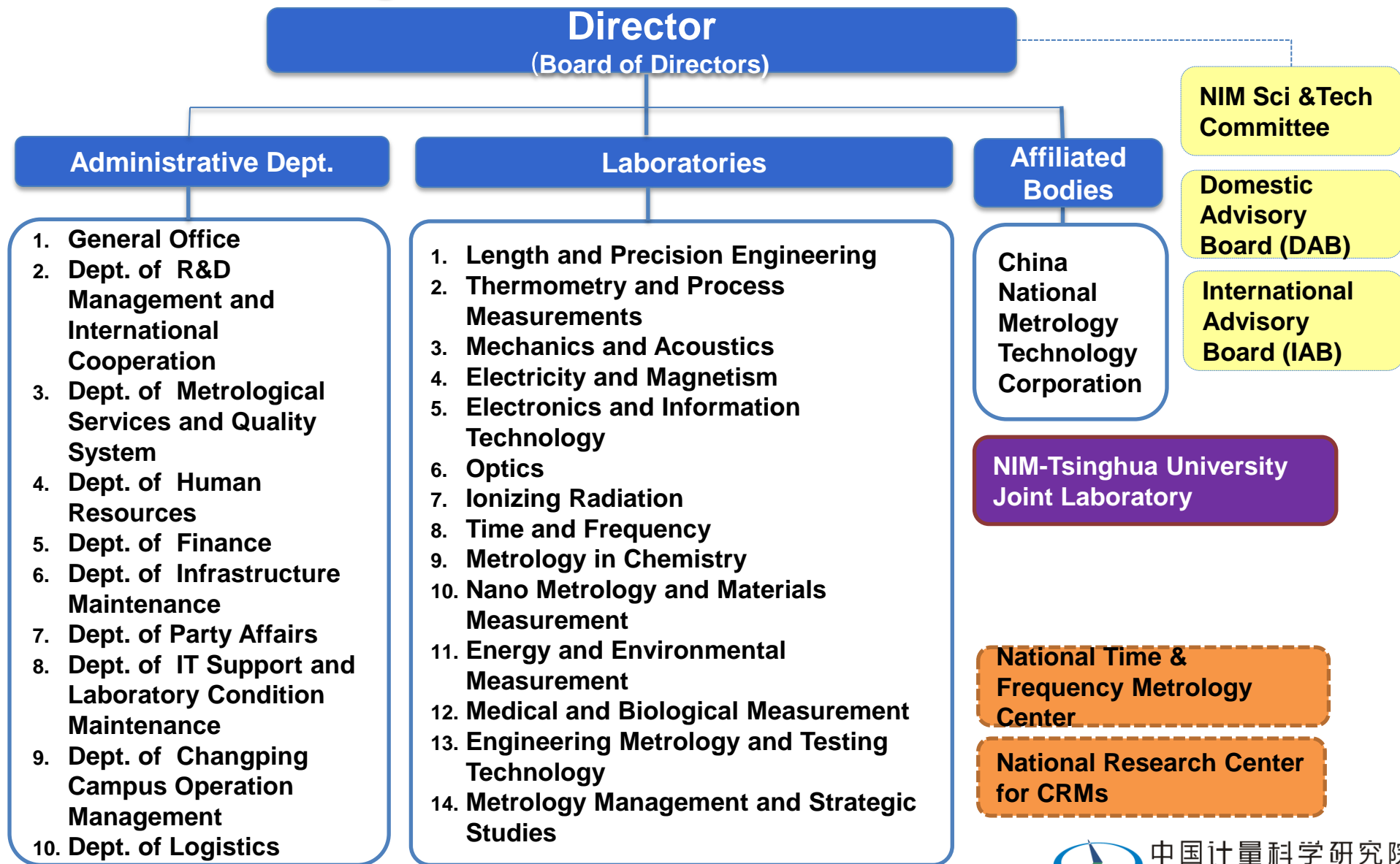


中国计量科学研究院
National Institute of Metrology, China

1. 发展历程 History



2. 组织机构 Organization



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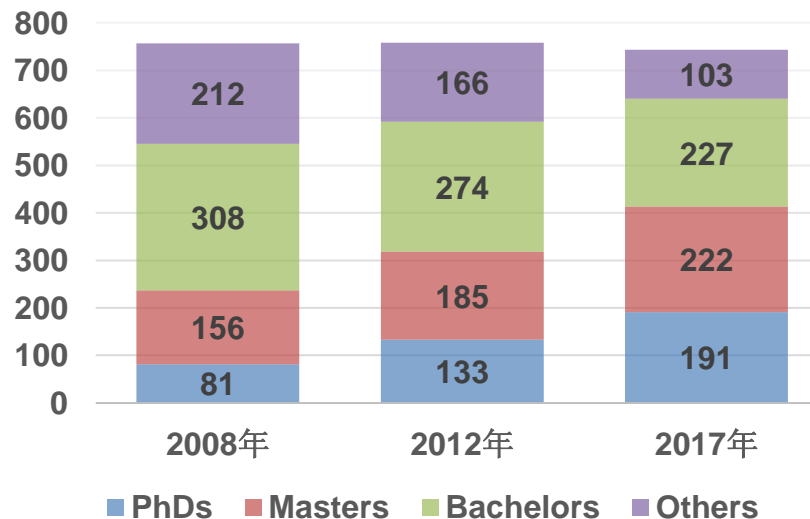
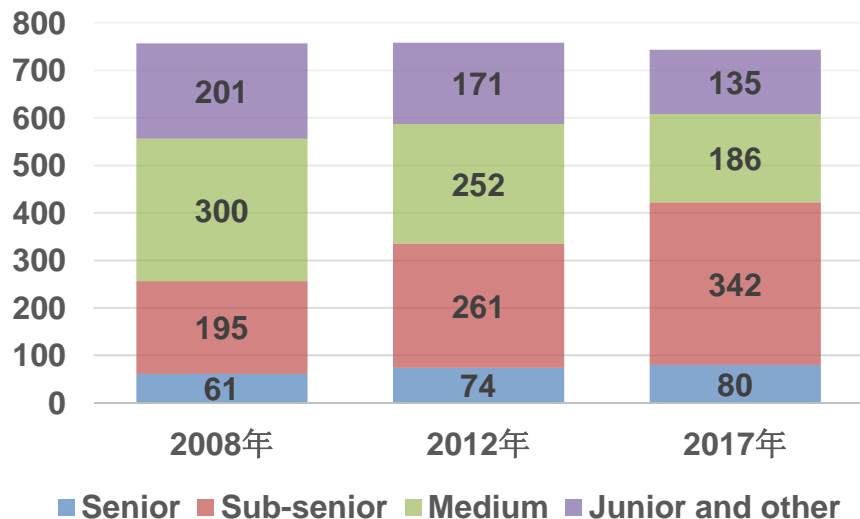
3. 人员和经费 Staff and Budget

人员总数: **约1000人**

含: 固定员工750人, 合同制人员150人, 学生等100人 (博士后27人)

~1000 persons

- 750 permanent employees
- 150 contract employees
- 100 students (27 post-doctors)



经费: **约1.45亿美元 (10亿元人民币)**

- 70% 国家财政拨款
- 30% 服务收入

US\$145million (900 mil YUAN) annually

- 70% government appropriations
- 30% service income

4. 技术能力 Technical Capabilities

基标准 Standards

•共保存计量基准、标准441项，比十二五时期增长18%；有证标准物质1356种，比十二五时期增长42%。

•441 national standards & 1356 CRMs

国际比对 Comparisons

•累计参加比对700余项，对国际和区域比对的参加率在60%以上。基准国际比对覆盖率为90%，主导国际比对的数量显著提高。

•~700 BIPM/CIPM/APMP comparisons

•More as piloting lab

•participation rate in international and regional comparisons exceeding 60%

获奖 Awards

国家级科技奖励80项、省部级科技奖励近400项。

80 state-level science awards

Nearly 400 ministry-level science awards

技术服务 Services

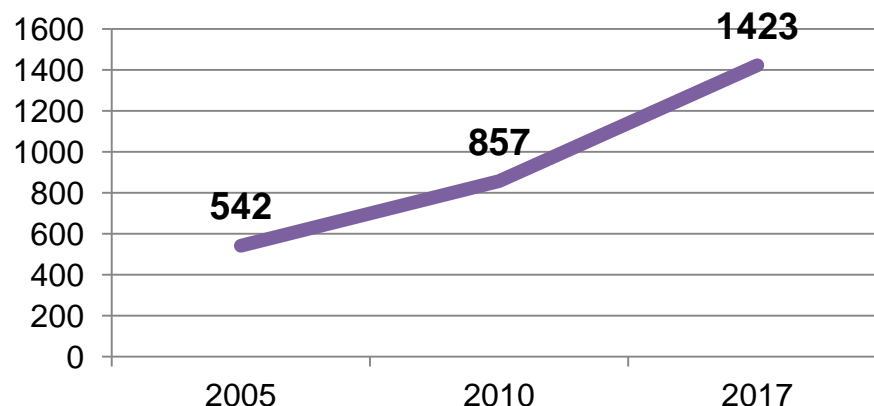
•开展经总局授权的检定服务587项、经国家实验室认可中心认可的校准服务568项、检测服务335项。

•Providing 587 AQSIQ-authorized verifications, 568 CNAS-accredited calibrations and 335 testing services to customers

CMCs

•目前获得国际互认的校准和测量能力(CMC)1423项，国际排名第4、亚洲第1。

•1423 CMCs in BIPM KCDB

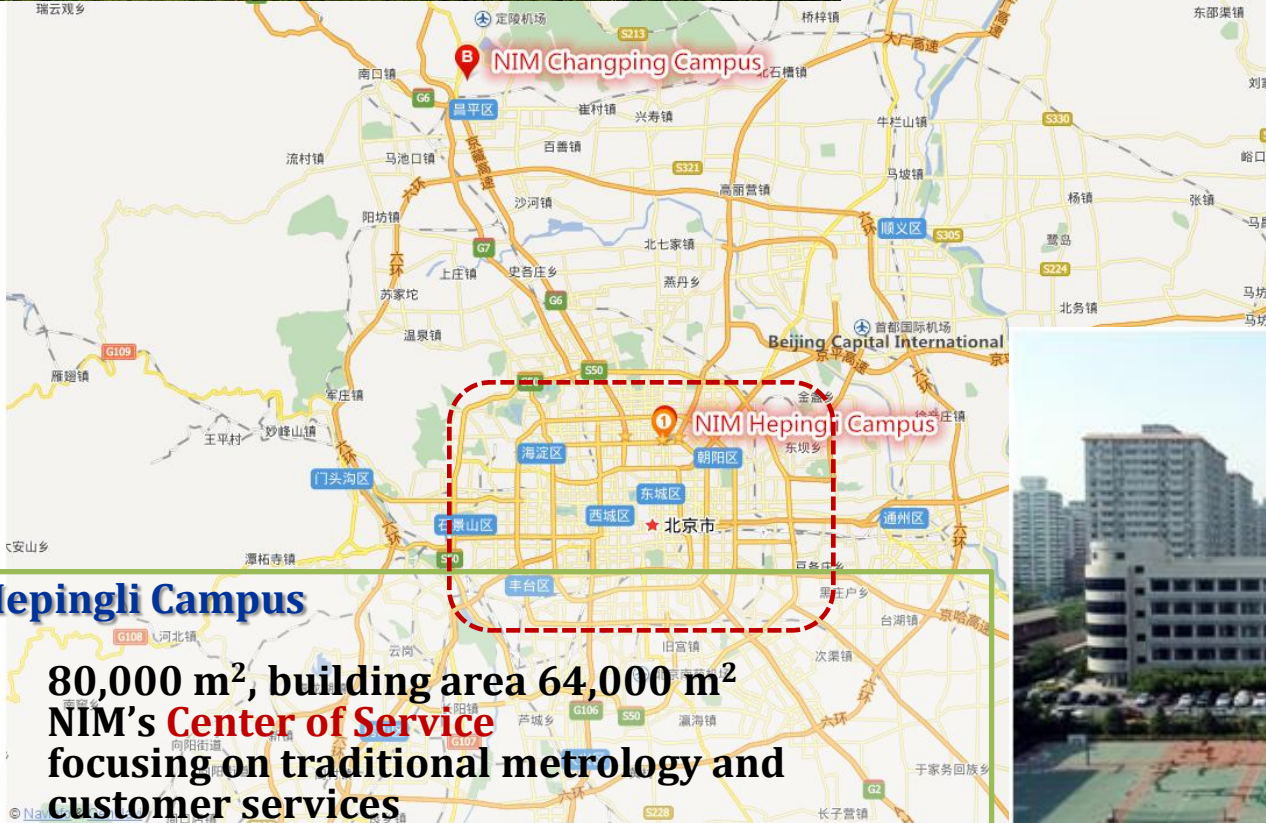


5. 院区 Campuses



Changping Campus

- 561,000 m², building area 45,300 m²
- 350 labs of environmental control
- NIM's **Center for Innovation, Collaboration & HR Development**
- focusing on basic research at frontiers & emerging areas



Hepingli Campus

- 80,000 m², building area 64,000 m²
- NIM's **Center of Service**
- focusing on traditional metrology and customer services

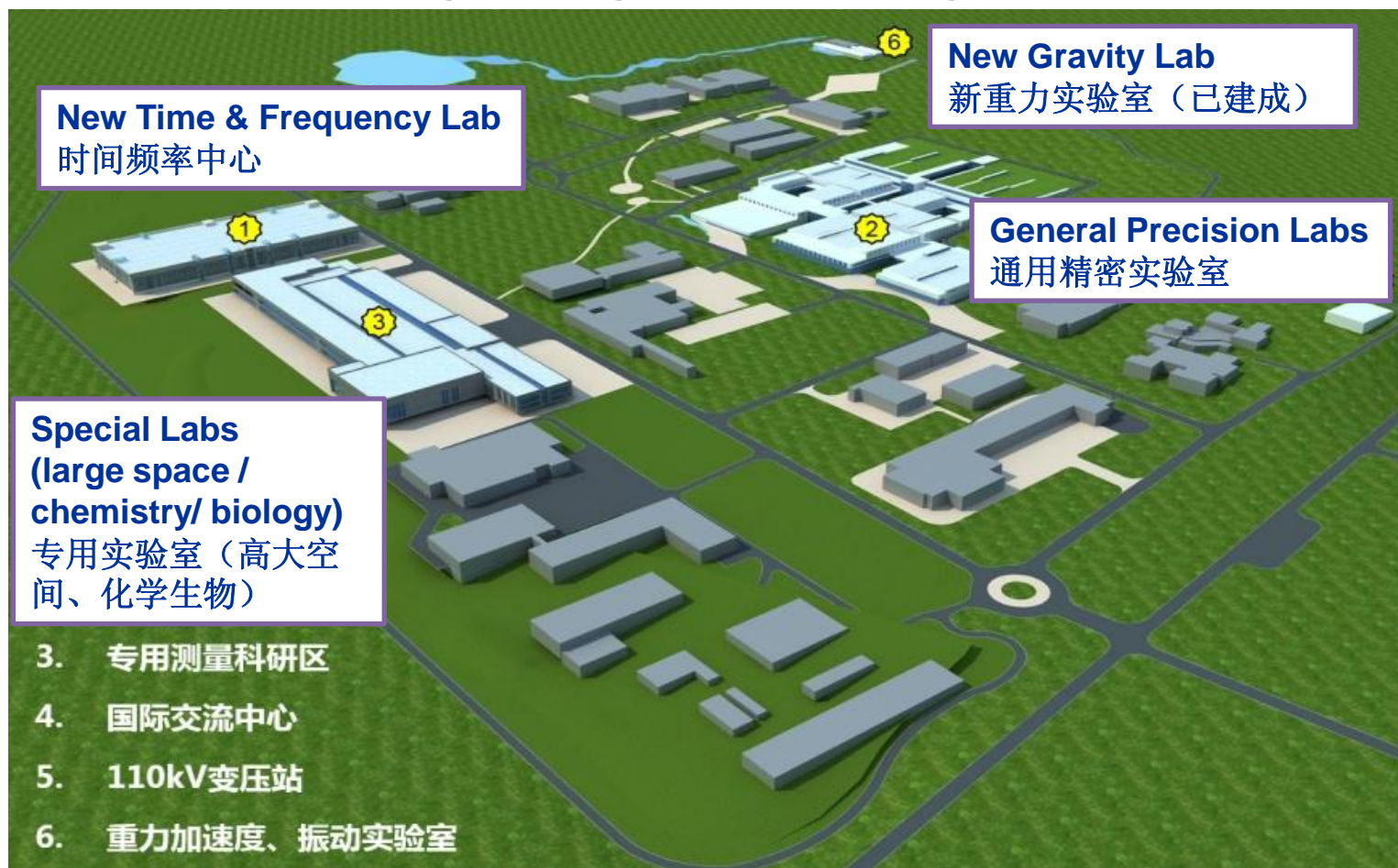


6. 昌平二期 Phase-II of Changping Campus (*under planning*)

建筑面积 Building Area: 86,000 m²

预算 Budget: \$558 Million (¥3.8 Billion)

目前状态 Status: Waiting for budget approval, design in process



7. 计量院“十三五科技创新规划”主要内容

NIM S&T Development Plan (2016-2020)

S&T Priorities三个研究方向、九个领域:

1: Basic research

- Determination of fundamental physical constants for the SI redefinition
- Development of new-generation quantum measurement standards
- Chemical and biological metrology.

基础前沿研究：**基本物理常数精密测定、新一代量子基准、化学和生物计量**

2: Emerging fields of metrology for industries and life quality

- energy, environment, advanced materials, medicine, biology, quantum devices, marine science, IT...

新领域计量标准- **能源、环境、新材料、医学、生物、量子期间、海洋、信息与通讯**

3: New measurement and calibration capabilities

- Embedded, in-situ, remote calibration methods and tools,
- Traceability system for micro/super large, dynamic quantities and measurements under extreme conditions

计量能力提升- **扁平化的量值传递体系和在线校准技术**

- 嵌入式, 实时、远程校准标准和技术；
- 极端量、动态量、复杂环境条件测量等

8. NQI项目 The NQI Program

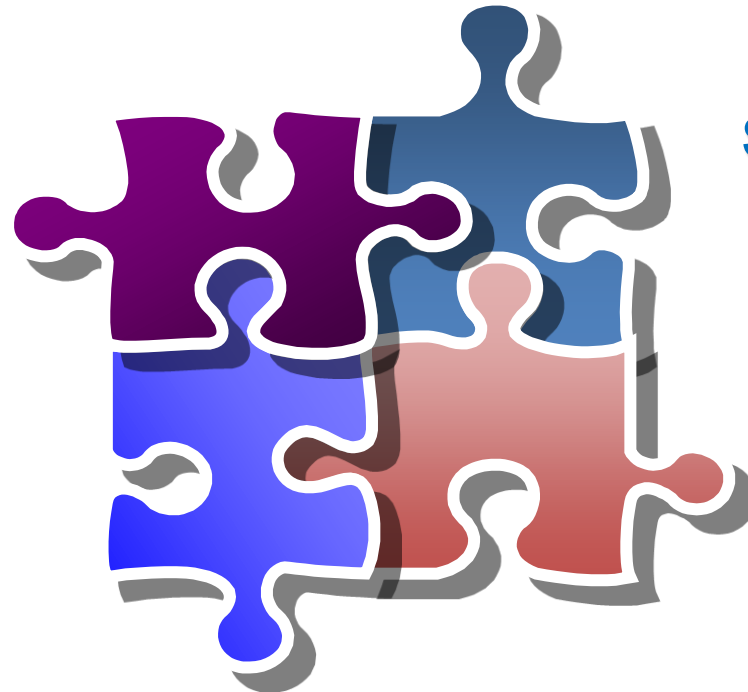
National Quality Infrastructure (NQI)

Generic Technology Research and Application – NQI 项目

- A R&D program that covers all sectors of NQI with NIM being the coordinator
是覆盖计量、标准化、认证认可、检测NQI整体的国家专项，计量院发挥主要协调作用
- Funded by Chinese Ministry of Science and Technology under the *National Key Sci&Tech Program* 由科技部“国家质量基础共性技术研究与应用”专项支持
- Funded with **\$273.8 million** (¥17.8 billion) for **5 years** 17.8亿元 (2.74亿美元) 5年

Metrology
计量

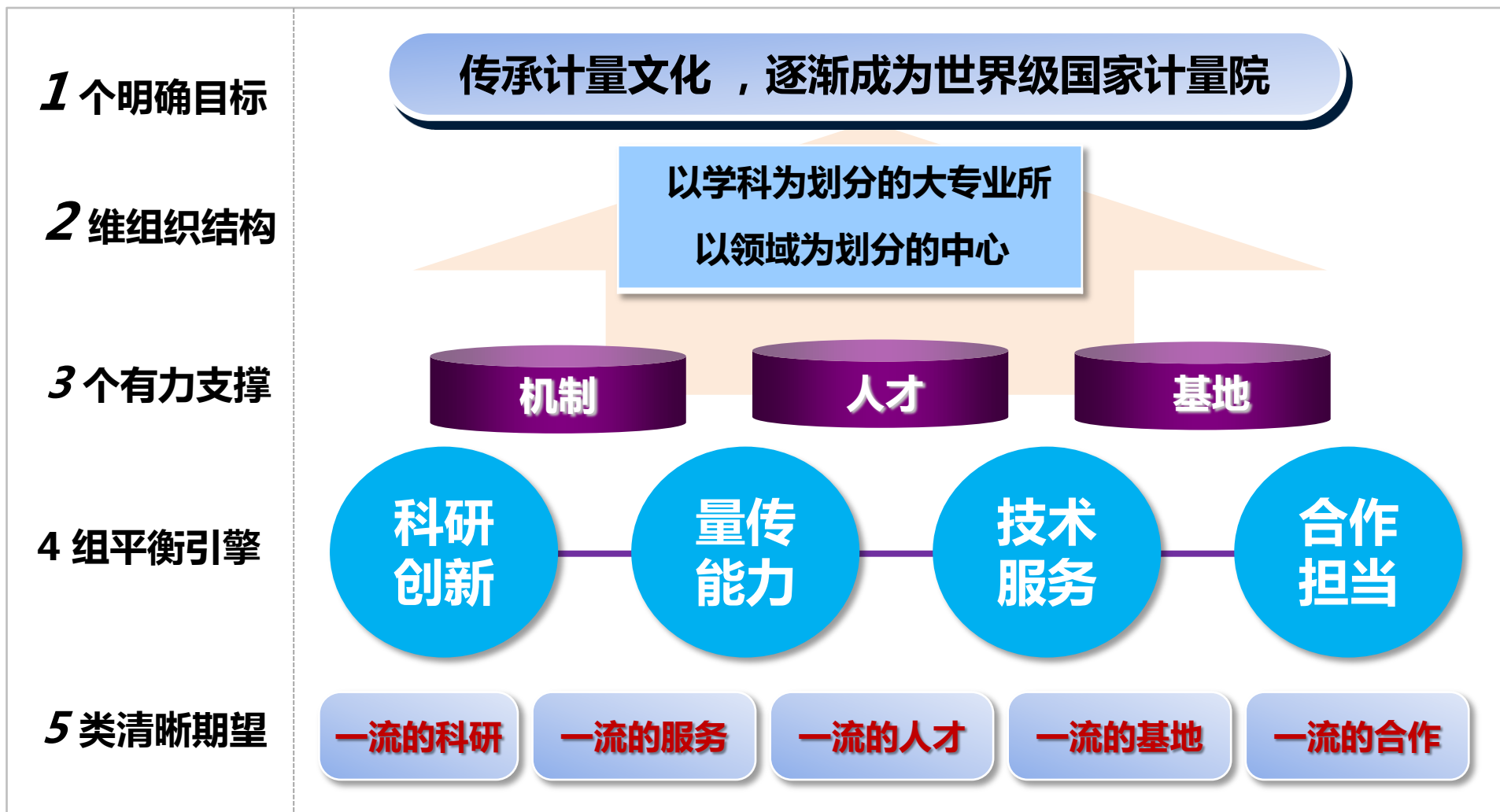
**Inspection &
Testing**
检验检测



Standardization
标准化

**Certification &
Accreditation**
认证认可

9. 发展规划



9. NIM Strategic Plan (2016-2025)

1 TARGET

A World-class NMI

2-D Structure

Div. L	Div. T	Div. M	Div. EM	Div. C
Area-based Center				

3 Pillars

Policy

People

Facilities

4 Engines

Basic
Research

National
measurement
capabilities

Metrology
for industry

Collaboration

5 Expectations

World-class
Research

World-class
Service

World-class
Scientists

World-class
Facility

World-class
Collaboration

Thank you
谢谢!