

UK-China Science Bridges: R&D on 4G Wireless Mobile Communications

Brief Introduction of China Telecommunication Technology Labs (CTTL, CATR)

Brief introduction of CTTL



The main task

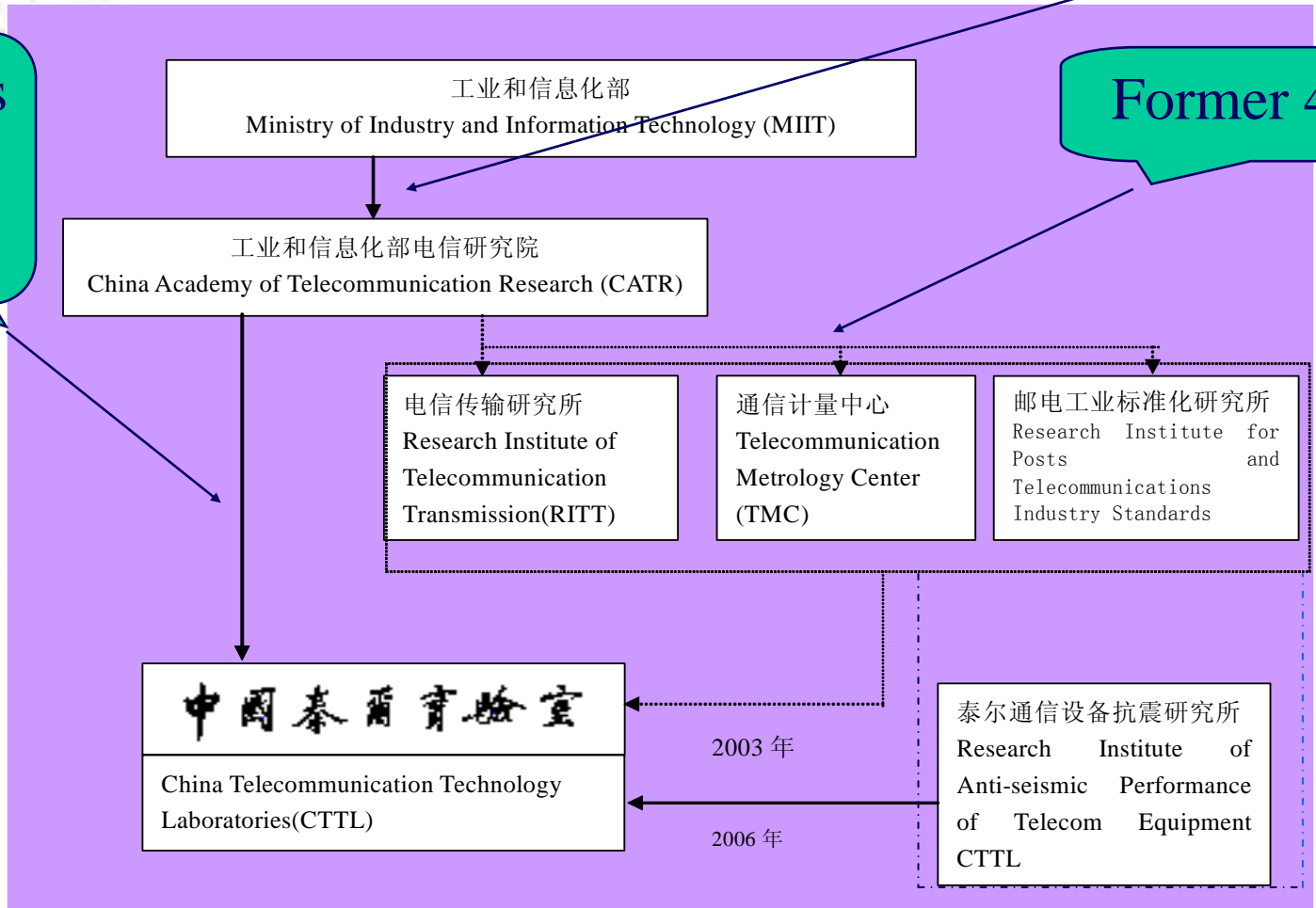
- Research of the new technology and evolution in the telecommunication information sectors
- R & D of standards about telecommunication information sectors
- Do the lot of test as a independent third part testing body

CTTL's Relations

Adminis
trating

Monitoring

Former 4 units



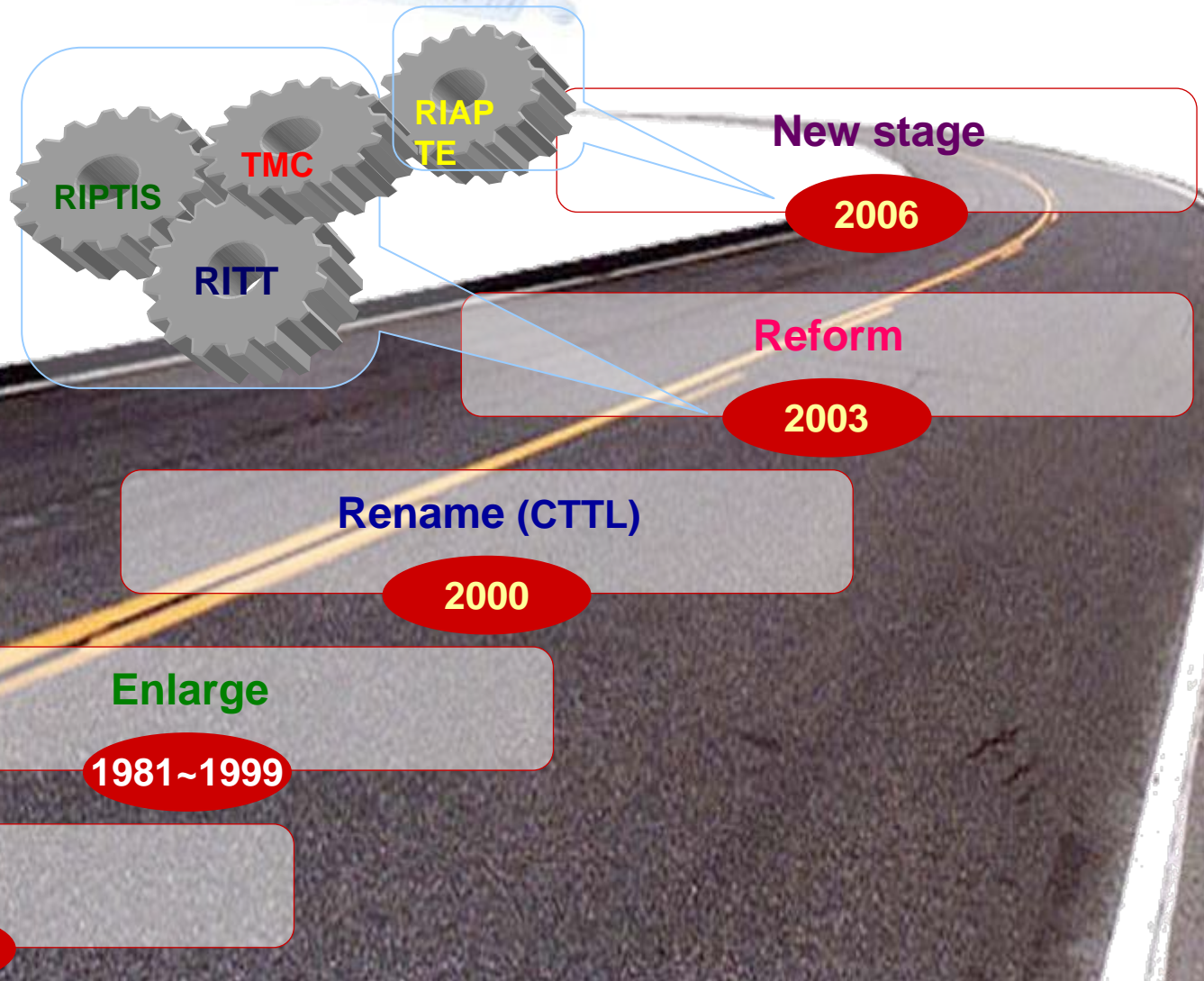
RITT: Research Institute of
Telecommunication
Transmission

TMC: Telecommunication
Metrology Center

RIPTIS: Research Institute of
Post & Telecommunication
Industry Standards

RIAPTE: Research Institute of
Anti-seismic Performance
of Telecom Equipment

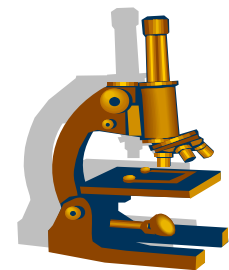
On the way



Resource

Recently

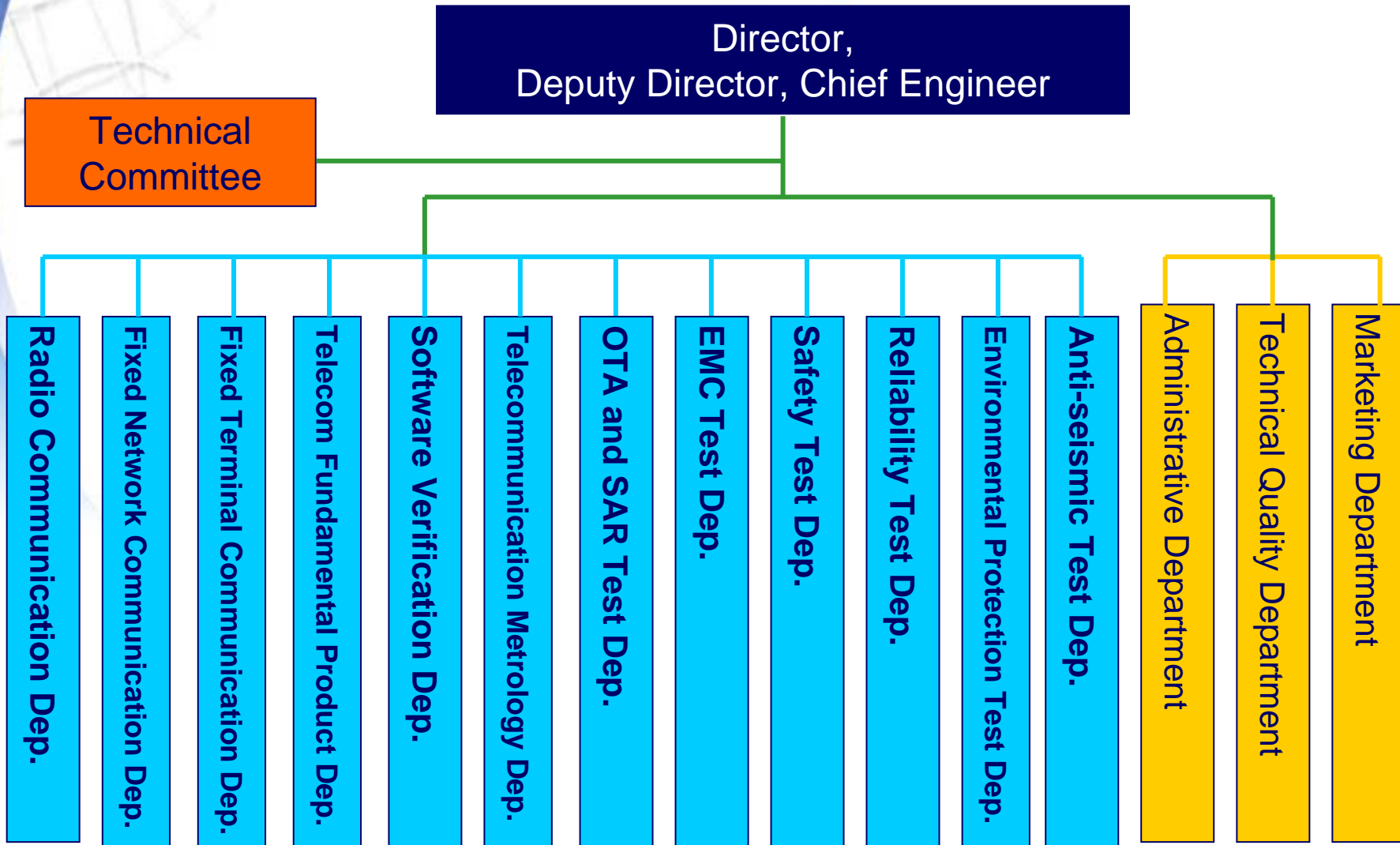
- CTTL has about **400** employees.
- CTTL has **5** locations in Beijing, Baoding and Shenzhen.
- CTTL has number of test instrument and systems valued about **¥ 600** million RMB (about **€ 60** million Europe dollars).



5 Locations Today



Organization (15Departments)



Main Research Work of CTTL

- In China, CTTL is a leading high-tech laboratory on the combined missions of Telecommunication technology development, telecommunication product standard and test methods research, telecommunication metrology standards and methods research , and evaluation of communication software.



CTTL often participates in the research and meetings of **CCSA, ITU, APEC-TEL, IEC, IEC/CISPR, IEEE, 3GPP, 3GPP2, GCF, CCF, PTCRB, USB-IF, R&TTECA** and so on.

Daily Test for Certificates

CTTL is capable to undertake:

- Test for Network Accessing License (NAL), Telecom Equipments Anti-seismic Test Certificate (ATC), CCC test, Test for telecom operators in China .
- Test for CE, FCC, GCF, CCF, CTIA, Bluetooth (SIG), NTRA and other global certificates.



Governmental Authorizations (14 roles)

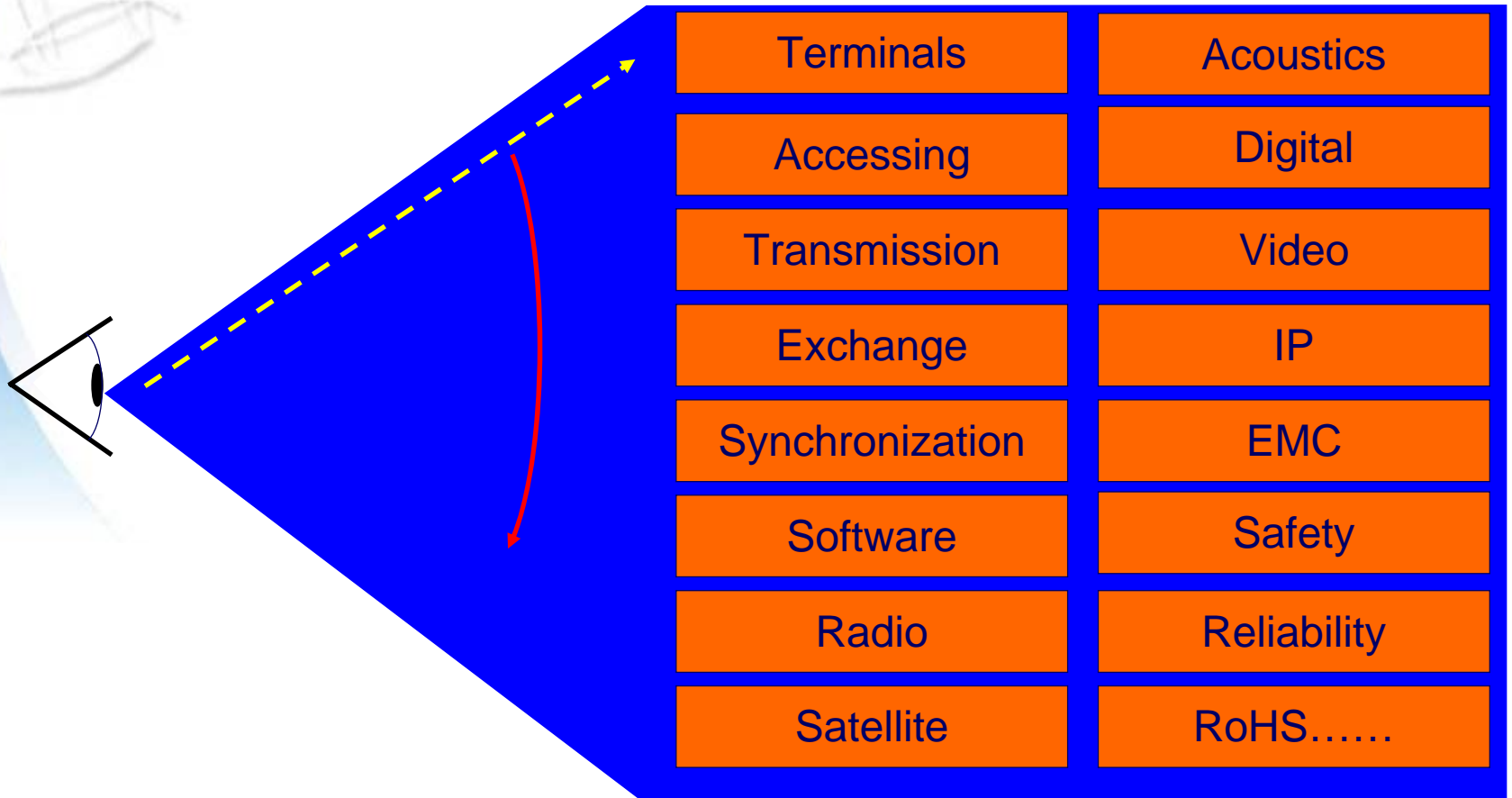
Be entrusted by the government to play some roles because of CTTL's professional work in China

- National Telephone Quality Supervision and Testing Center
- National Scientific and Technical Results Testing Appraisal Body for Telephone products
- China Testing Body for Network Access of Telecommunication Equipment
- National Laboratory for China Compulsory Certification (CCC)
- National Telecommunication Metrology Station
- Environmental Protection Test Accelerating Center , MIIT
- Software Appraisal Center, MIIT

Governmental Authorizations

- Telecommunication Metrology Center, MIIT
- Graphic and Text Communication Equipment Quality Supervision and Testing Center, MIIT
- Mobile Communication Equipment Quality Supervision and Testing Center (Beijing), MIIT
- Telephone Switching Equipment Quality Supervision and Testing Center (Beijing), MIIT
- Posts and Telecommunication Industry Products Quality Supervision and Testing Center, MIIT
- EMC Test Center for Telecommunication Equipment, MIIT
- Anti-seismic performance of communication equipment quality Supervision and Testing Center, MIIT

Test Capabilities



Radio Communication

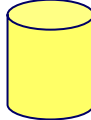







- Test capabilities covers:
- Mobile terminals and base stations:
GSM/GPRS, CDMA, CDMA 1x and TD-SCDMA, WCDMA, CDMA2000
- Wireless access systems: WLAN, LMDS, MMDS, WiMAX, RFID, Bluetooth
- Wireless data system, paging system, trunk system
- Repeater system, digital cordless telephone system
- Satellite communications etc.



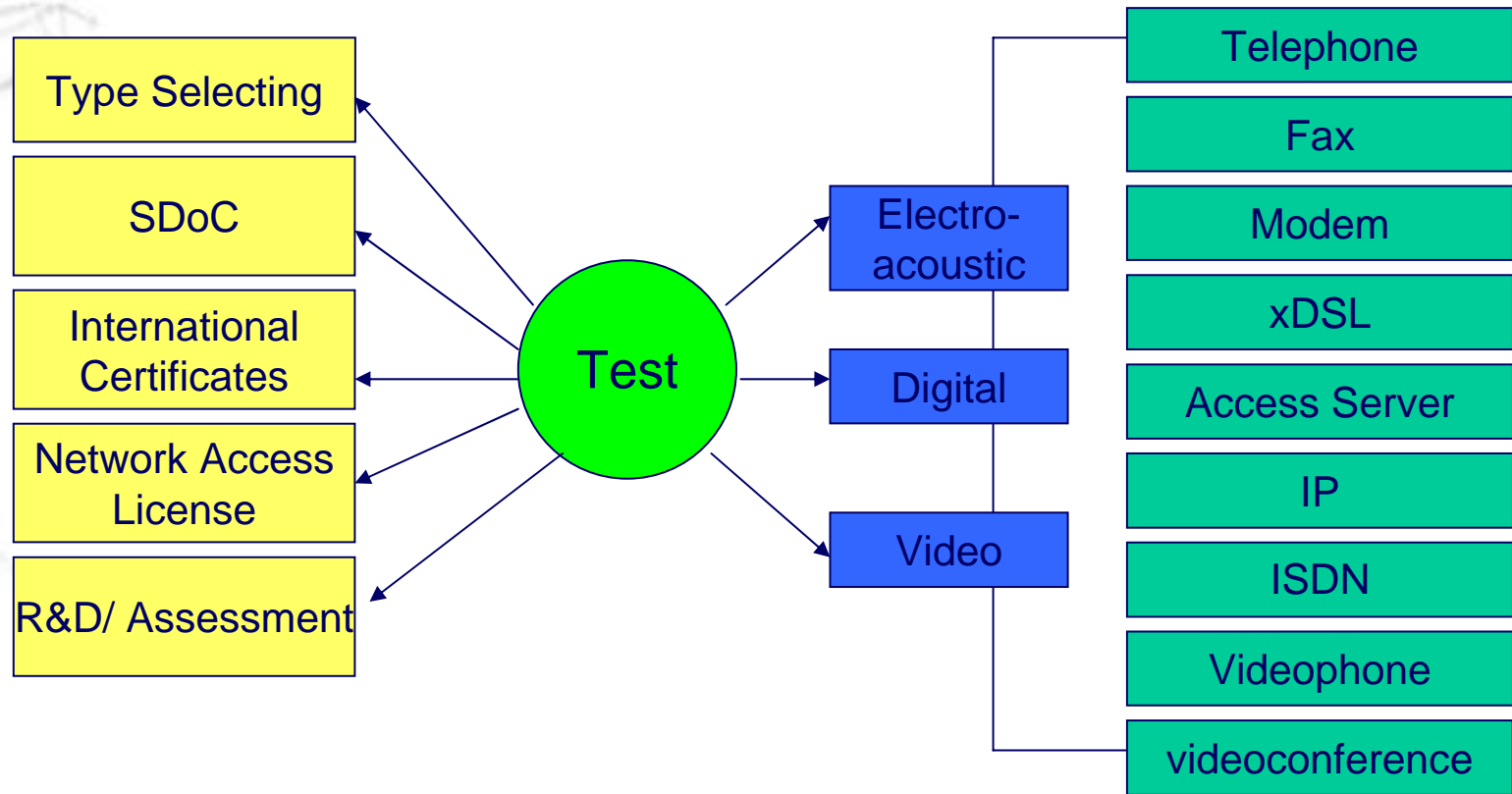
Fixed Network Communication



Test

-  Switching System
-  Accessing System
-  Optical transmission
-  Intelligent network
-  Synchronous network
-  Telecom Billing
-  No.7 Signaling
-  Optical passive components

Wireline Terminal Communication



Telecom Fundamental Products Dept.

Department of telecom fundamental products is mainly devoted to the performance test and reliability assessment of various cables, connectors, distribution frame, power supply systems, battery unit and telecom safety protection components.



Pulse Current Generator



Pull Test

Software Verification

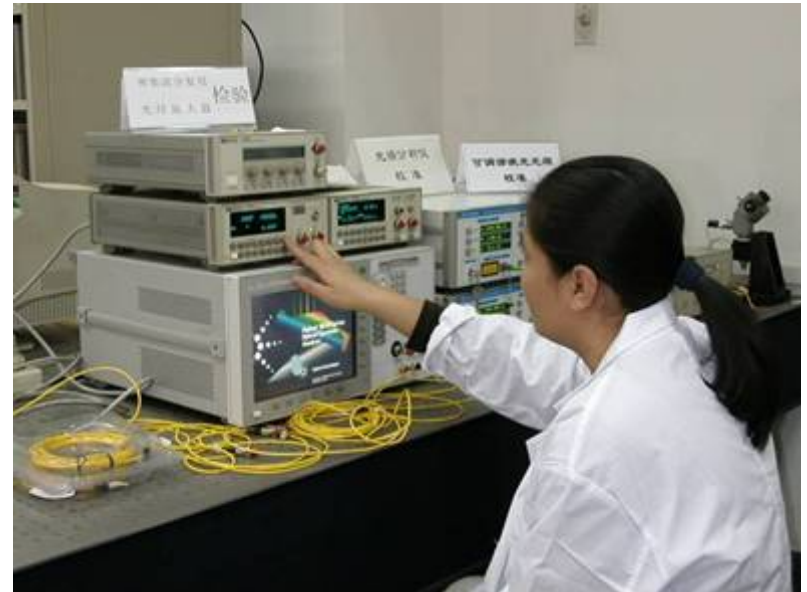
To offer services on the evaluation and diagnosis of embedded communication software, and the verification of software integrity and reliability, which the services can be done in the phase of research and development, producing and final production inspection.



Telecommunication Metrology

To provide metrology and calibration, acceptance and arbitration test of telecommunication instruments, which the services can also be extended to the location as client requires and offer integrated comprehensive instrument quality assurance.

Digital Calibration



Optical Calibration

Test capabilities for EMC sector



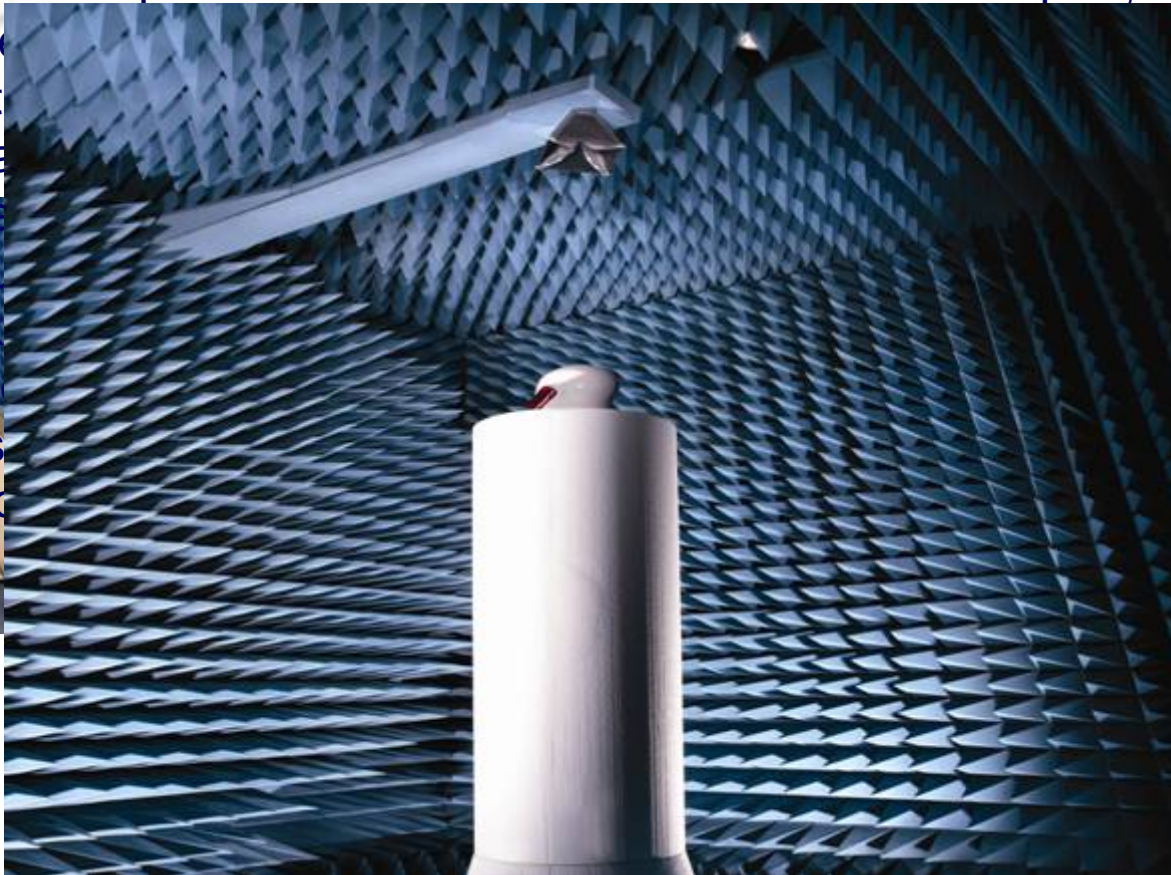
Department of EMC test

CTTL has excellent EMC test environment with well equipped 23x17x10m and 12x6x6m full/semi-anechoic chambers as well as an open-site test area. The EMC department provides EMC and radio testing against Chinese standards and international standards. Technical consultation can be also provided and has helped many clients to solve difficult tests and debugging problems.



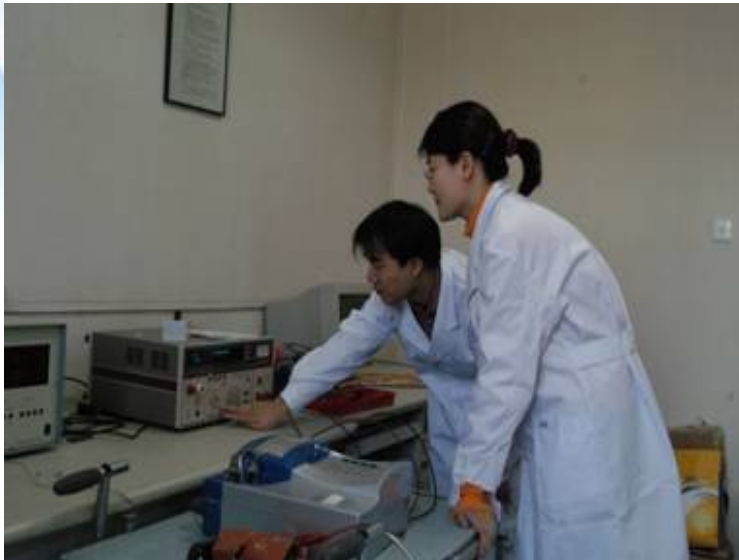
OTA and SAR Test

Offer "One Stop Service" on antenna and EMF! For OTA part, as the first authorized laboratory, test capability and all the other measurement services have been found. For the SAR part, we have been found to perform the SAR test according to the request of the customer and provide the HAC test service.

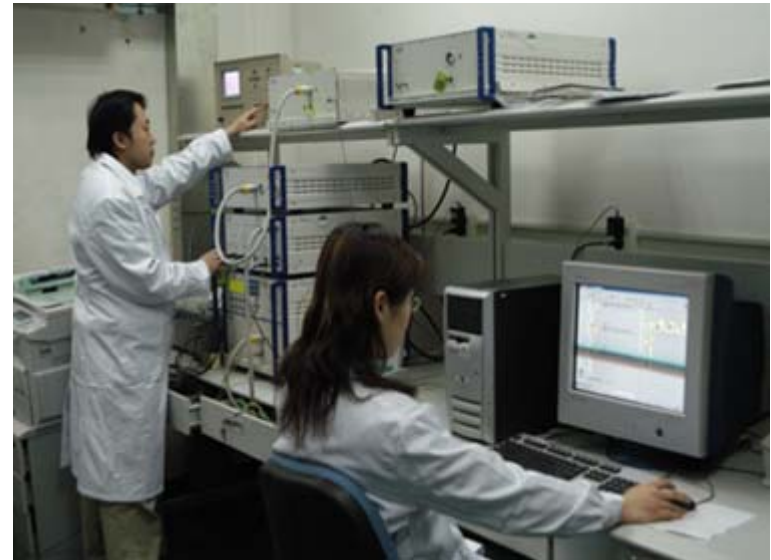


Safety Test

- The safety laboratory was established according to the requirements of IEC60950.
- Test items include insulation, resistance to heat and fire, flammability, protection against lightning and electric shock, creepage distance, earth leakage current, protection of telecommunication network etc.



Safety Test



Flammability Test

Environmental Protection Test Dept. (RoHS)

The new established labs is capable for

- Chemical tests about RoHS and other hazardous materials
- Whole validation of electronic electric products
- Training on
 - Green design
 - Government policy, rules and related standards
 - Lead-free manufacture
- Consultation of demand and supply chain management



ICP – OES Balance & Water Purification System



UV-VIS Spectrometer



Microwave Digestion Instrument



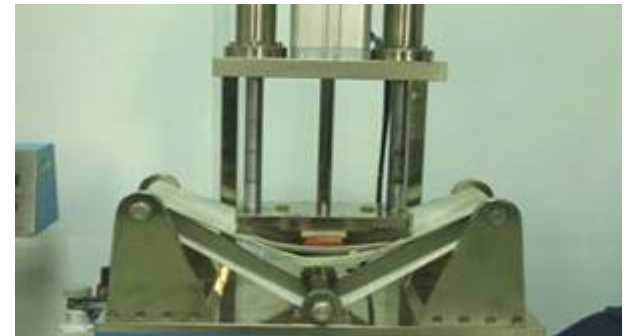
GC – MS

Reliability Test

- Temperature / humidity steady and cycling test.
- Life test for telephone push-button, hook-switch, handset cord-line, IC card and mobile phone cover, etc.
- Vibration, shock and fall test.
- Torque & bending test.
- Special protection test.



Folding Test



Flexible Test



Temperature Test

Anti-seismic capability Test Dept.

- Having advanced earthquake simulating platform and telecommunication instruments.
- Tests for various types of products including
 - Transmission equipment
 - Switch equipment
 - Communication power supply
 - Storage battery
 - base station of GSM, CDMA, 3G



Southern Test Department

- Southern Test Department could take RF、AF、Environment Reliability test for GSM and CDMA mobile equipments. Its services including NAL、CE、FCC and other series of testing and verification works.



Marketing

Focus on
Client

Base on
Marketing
Demand

Offer
One-Stop
Service

Benefit
for All

Service Goal

CTTL

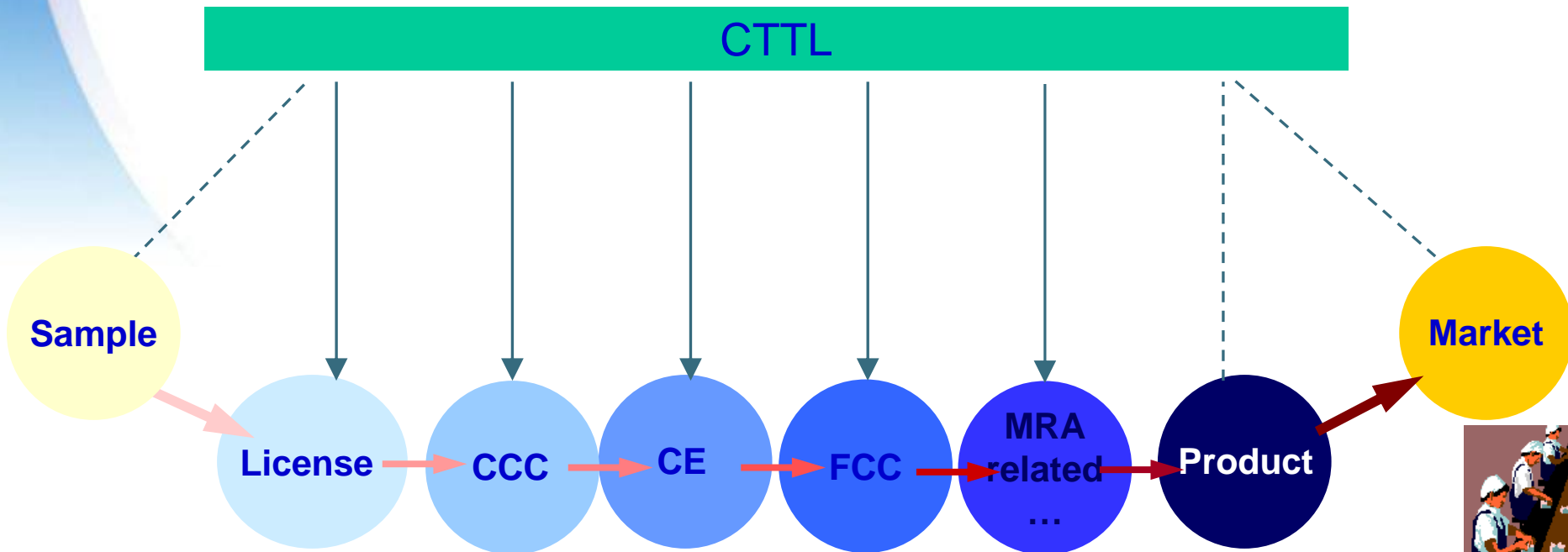
Have Consideration

Take Responsibility

Give Satisfaction

One-Stop Service

- CTTL Quality System was updated according to ISO/IEC 17025 and accredited by CNAS and DaTech accreditation bodies.
- Both national and worldwide certification could be got through CTTL test, and it benefits all clients.



Thanks !

