



# Introduction of Typical global certification system ---GCF/PTCRB/CTIA

2015-10

**CTTL-Terminals**

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- CTIA certification
- How to get the market access in EU and USA





# GCF certification



# Background to GCF



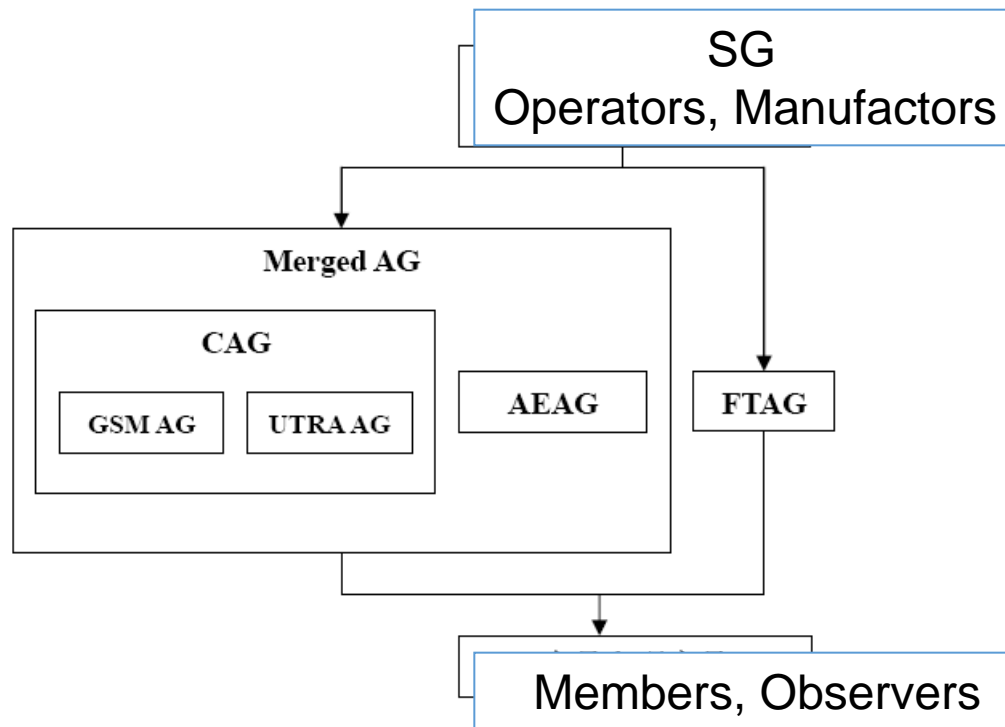
- Found in 1999 <http://www.globalcertificationforum.org>
  - ✓1999/08/24
  - ✓GSM Association & terminal (mobile) manufactures
  - ✓London Agreement
- Precursor:
  - ✓After cancel the Mandatory conformance test(FTA),insure the GSM terminal quality by telecom operators & manufactures
- Operator requirment:
  - ✓vodafone, Orange, etc
- Voluntary certification

# organization structure for GCF



- Borad
- Steering Group
  - Organization Procedures
  - Operating Budget
  - Application Procedures
  - Principle Documents
  - Abbreviations & Definitions
- Agreement Groups
  - CAG( Combined AG): **Develop & Maintain** GERAN/UMTS/LTE/AE conformance & Interoperability requirment
  - FTAG( Field Trial AG) **Develop & Maintain** filel trial requirment
  - PAG(Performance AG) **Develop & Maintain** performance requirment
  - AAG(Accessory AG) **Develop & Maintain** Accessory requirment

# organization structure for GCF



# organization structure for GCF

## --GCF Board



- Board make by:
  - Steering Group president & Vice president & GCF OM
  - Mostly 6 operators
  - Mostly 6 manufactures
- Board meeting: 4 times/year; 1+ day/time
- Board vote:
  - vote through by more than 3 operators & 3 manufactures
  - Notice earlier 48 hours
  - Vote on behalf of the company

会

# organization structure for GCF

## -- Steering Group



- SG meeting: 2-5times/year
- Special meeting:
  - call a meeting by president & Vice president
- approval by all the members
- Or vote through by more than 50% operators & 50% manufactures



# organization structure for GCF -- Agreement Group



- AG meeting: 4 times/year
- Develop & Maintain:
  - conformance & Interoperability requirement
  - File trial requirement
  - performance requirement
  - Accessory requirement

# GCF member



- Full member
  - Telecom operator & terminal (mobile) manufactures
  - Vote right
- Observer
  - test lab & Instrument manufacture...
- All the member can join the SG&AG meeting

# GCF certificate

## -- technical requirement



- 2G:3GPP TS51.010
- 3G:3GPP 34.12x
- LTE:3GPP 36.52X
- ETSI/OMA

Conformance test

Standard :  
GCF CC  
document

According to  
Pics file

Self declaration

- GSM
- WCDMA
- Do not test LTE

OTA test

Interoperability test &  
Field Trial

- End to End testing
- According to the requirement of GCF FTQ
- test against 5 different in frastructure combinations



**GCF**<sup>TM</sup>  
Global Certification Forum

GCF PC & GCF AC  
(not mandatory)

- GCF PC:Audio/Data throughput/battery life/OTA
- GCF AC:EMC/safty/Electrical SIM





# PTCRB certification

# Background to PTCRB



- PCS Type Certification Review Board
- Found in 1997 by USA operator <http://www.PTCRB.org>
  - ✓1997/03
  - ✓Telecom operator & terminal (mobile) manufactures & test lab
- Voluntary certification & Quasi mandatory
  - Not the government requirement
  - Certification forum requirement
- PTCRB Certification & standard file:
  - 3GPP/OMA/ETSI standards
  - PTCRB operator requirement

# organization structure for PTCRB



- PVG ( PCS Validation Group )
  - Define the test list for every terminal, Insure the test list consistency
  - Constitute the PTCRB requirment
  - IPR for the PTCRB requirment
  - **Authorize the PTCRB test lab—different with GCF**
  - Certified & Management Department:CTIA

# PTCRB CERTIFICATE -- DIFFERENT WITH GCF



## From Application

- ▶ Manufacture submit form the PTCRB websit  
Test lab accept from the PTCRB websit
- ▶ Initial/Variant/ECO application

## From technical requiement

- ▶ More test:3G RF RSE/CTIA OTA/WiFi  
OTA/TTY/AT command
- ▶ More GCF test band : GSM:900MHz , 1800MHz  
WCDMA:Band I

...

# GCF in EU



**Form :**  
According to R&TTE directive ;  
GSM Association & manufactures  
Test LAB & Instrument manufacture  
can not vote, can join by observer

**Work :**  
Validate test cases & test platform

- Define the test list for every terminal, Insure the test list consistency
- Insure each GCF certification terminals can pass the test list
- Technology evolution
- Only test in the third party

**Function :**  
Constitute the test standard & test cases according to 3GPP  
**WHEN & HOW** Start the conformance test



GCF  
Global Certification Forum

manufacture

lab

GCF is not the  
Mandatory requirements;  
Accept by most  
Country and operator;  
HIGH ACCEPTANCE

- Validate the conformance test & Field test & AE test in 3 party test lab
- Self declaration by manufacture
- random inspection by GCF

- Not validate test lab
- Only ISO 17025 for test lab



# PTCRB in USA



CAICT

Form :  
Same to GCF,  
telecom operators & manufactures  
Separate certificate for test lab  
in PTCRB

Work 工作:

1. Constitute the PTCRB requirement
2. Constitute the test lab standard
3. vote the standard by PTCRB meeting
4. Release the resolution

Function :

Constitute the test standard & test cases according to 3GPP  
WHEN & HOW Start the conformance test certificate for test lab



PTCRB  
PCS Type Certification Review Board

manufacture

lab

- Be the member for the PTCRB
- take test in the PTCRB acceptable LAB
- Submit the test report on PTCRB website
- Validate by PTCRB

PTCRB is the Mandatory requirements by Country and operator;  
Certification form schemes & Mandatory & NOT the government requirement

# GCF/PTCRB test standard



## common standard

- GSM conformance
  - 3GPP TS 51.010-1 – RF, protocol, RSE, audio, SIM, AGPS, GAN
  - 3GPP TS 51.010-4 - STK
- WCDMA conformance
  - 3GPP TS34.121-1 – RF, RRM
  - 3GPP TS 34.123-1 – protocol
  - 3GPP TS 26.132 – audio
  - 34.171 – AGPS RF
  - 3GPP TS 31.121 – USIM
  - 3GPP TS 31.124 – USIM AE
  - ETSI TS 102 230 – UICC

# GCF/PTCRB test standard



- LTE conformance
  - 3GPP TS36.521-1 – RF,
  - 3GPP TS36.521-3 - RRM
  - 3GPP TS 36.523-1 – Protocol
  - 3GPP TS 31.121 – USIM/UICC
- AE conformance
  - OMA-ETS-MMS-1\_3
  - PoC
  - IMTC-3G 324M VT
  - OMA-ETS-DM-V1\_2
  - OMA-ETS-SUPL-V1\_0

# GCF/PTCRB test standard



## GCF only

- IEC 62002 - DVB-H
- 3GPP 34.114 - OTA
- TS.11 – Field Trial

## PTCRB only

- CTIA\_TestPlaforMobileStationOTAPerformanceRevision\_V3.1 – OTA
- CWG\_RF\_Test\_Plan\_1.3 – WiFi OTA
- AT Command Test Specification v2010-08-11
- PTCRB\_Bearer\_Agnostic\_TTY\_Test\_Specification\_v1.0
- 3GPP TS 34.124 3G RSE

# GCF/PTCRB test platform

## conformance test system

1. RS TS8950GW
2. RS TS8950G
3. RS CRTUG
4. RS CRTUW
5. RS TS8980
6. Anritsu ME7873F
7. Anritsu ME7873L
8. Anite SAT8
9. Anite SAT UE
10. Anite9000
11. Comprion IT3
12. CMU200+UPL16/HATS
13. AT4 MINT
14. Setcom S-CAT5020
15. Agilent GS8800
16. SIMfony





# CTIA Certification



# CTIA –The Wireless Association

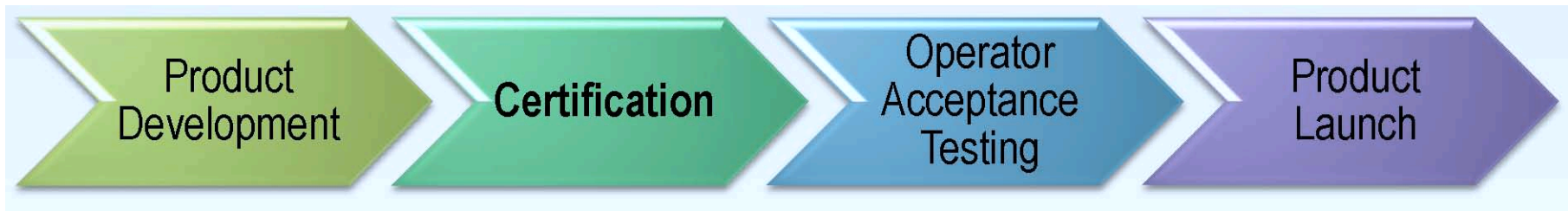


- Non-profit membership organization representing wireless communications industry
- Based in Washington, DC
- Advocates on behalf of its members and coordinates industry initiatives
- Provides industry certification program for wireless devices

# Industry Certification Role



- Provides assurance that device meets industry-defined requirements
  - Working groups composed of industry representatives define requirements





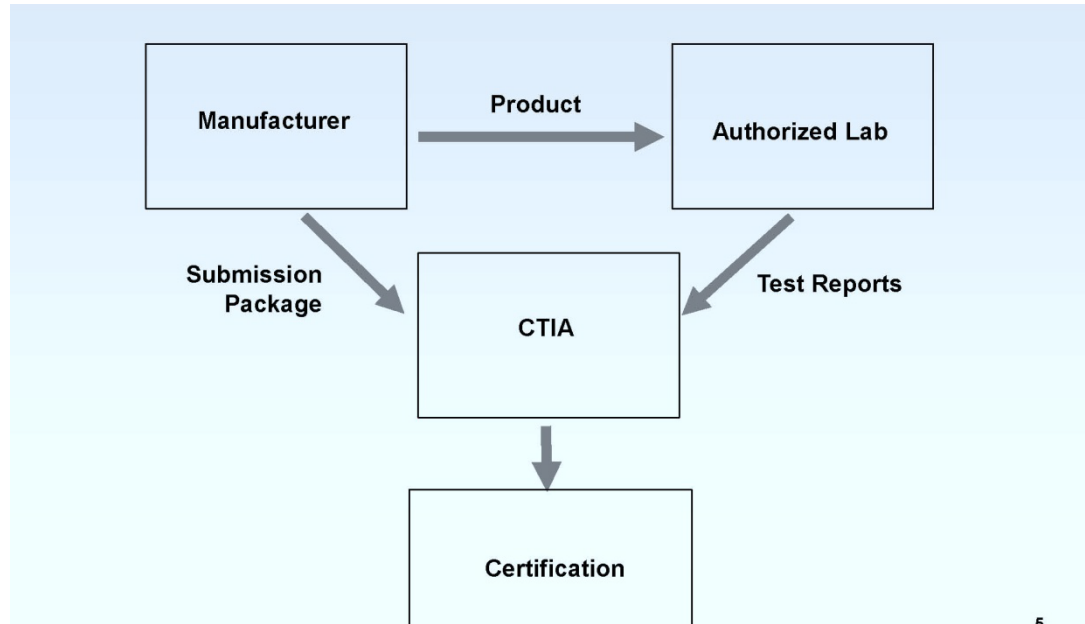
# Verifies wireless device conformance



- Global technical specifications such as 3GPP and 3GPP2
- CTIA specifications:
  - CTIA Test Plan for Mobile Device Over-the-Air Performance
  - CTIA/Wi-Fi Alliance Test Plan for RF Performance Evaluation of Wi-Fi Mobile Converged Devices
  - CTIA Certification Requirements for Battery System Compliance to IEEE 1625/1725
  - CTIA Bluetooth Compatibility Test Plan
  - CTIA LTE Interoperability Test Plan
  - CTIA Hearing Aid Compatibility Test Plan
  - CTIA Speech Performance Test Plan



# Certification Process



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# CTIA Authorized Test Lab Requirements



- ISO/IEC 17025 accreditation (General Requirements for the Competence of Testing and Calibration Laboratories)
- Assessment by CTIA-appointed Subject Matter Expert
- Sign CATL License & Service Agreement
- Follow Policies and Procedures for CTIA Authorized Testing Laboratories Document



# CTIA Authorized Test Labs



**32**  
in North America

**8**  
in Europe

**56**  
in Asia

# CTIA Web Site



Multimedia Store Career Center Share Search



POLICY & INITIATIVES

RESOURCE LIBRARY

YOUR WIRELESS LIFE

CTIA SHOWS

BECOME A MEMBER

ABOUT US

## POLICY & INITIATIVES

### POLICY & INITIATIVES

Policy Topics

Voluntary Guidelines

Common Short Codes

Wireless Device  
Certification

CTIA Authorized Test  
Labs

Certification Test Plans

Supplier Best Practices

Policy & Initiatives > Wireless Device Certification

## Wireless Device Certification

Thanks to CTIA member companies that constantly innovate and develop the fastest, hottest and “coolest” mobile technology, the U.S. wireless industry is the world’s leader.

Yet many consumers don’t realize that the U.S. wireless industry, through CTIA, takes extensive steps to ensure its products (e.g., phones, tablets, batteries, etc.) are reliable before they are commercially available. Even though the CTIA certification process is voluntary, many providers seek the independent verification to ensure their devices are proven.

- [CTIA Authorized Test Labs](#)
- [Certification Test Plans](#)
- [Supplier Best Practices](#)





# How to get the market access in EU and USA

# How to get the market access



FCC  
(USA)

CE R&TTE  
(Europe)

other countries

GCF  
PTCRB  
CCF

CTIA  
NVIOT

Bluetooth SIG  
Wi-Fi USB-IF ...

Operators & end-users

Customization

NSIOT

FTIOT

User Experience

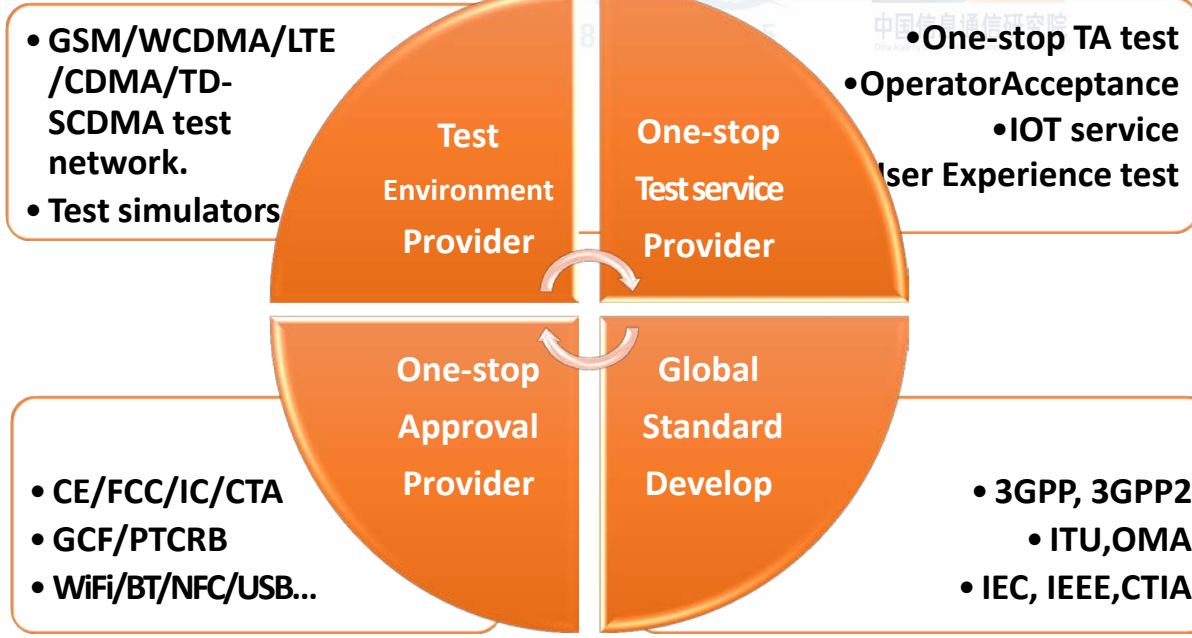
regulatory requirements

requirements of certification schemes

Operator requirement

# About CTTL-Terminals

- 3<sup>rd</sup> party service provider
- World wide customers
- Over 500 engineers in Beijing



- GSM/WCDMA/LTE /CDMA/TD-SCDMA test network.
- Test simulators

- One-stop TA test
- Operator Acceptance
- IOT service
- User Experience test

- CE/FCC/IC/CTA
- GCF/PTCRB
- WiFi/BT/NFC/USB...

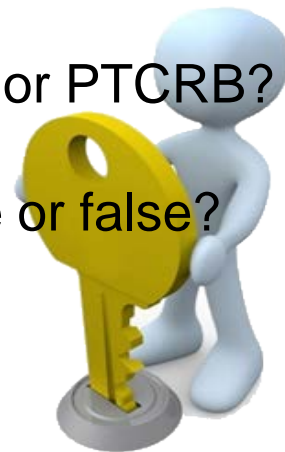
- 3GPP, 3GPP2
- ITU,OMA
- IEC, IEEE,CTIA





## Exam questions:

- 1.The full name of “GCF”and”PTCRB”?
- 2.Which certification fourm need audit test lab,GCF or PTCRB?
- 3.CTIA certification is an Operator requirement, true or false?





(Trainer information)

Trainer: Haipeng Wu

E-mail: [wuhaipeng@caict.ac.cn](mailto:wuhaipeng@caict.ac.cn)

Department:CAICT

Address: No 52, huayuanbei Road, Haidian  
District, Beijing, China 100191



# CAICT 中国信息通信研究院

China Academy of Information and Communications Technology



<http://www.caict.ac.cn>