Conformance test introduction

CTTL-Terminal GTE
Zhong Nan
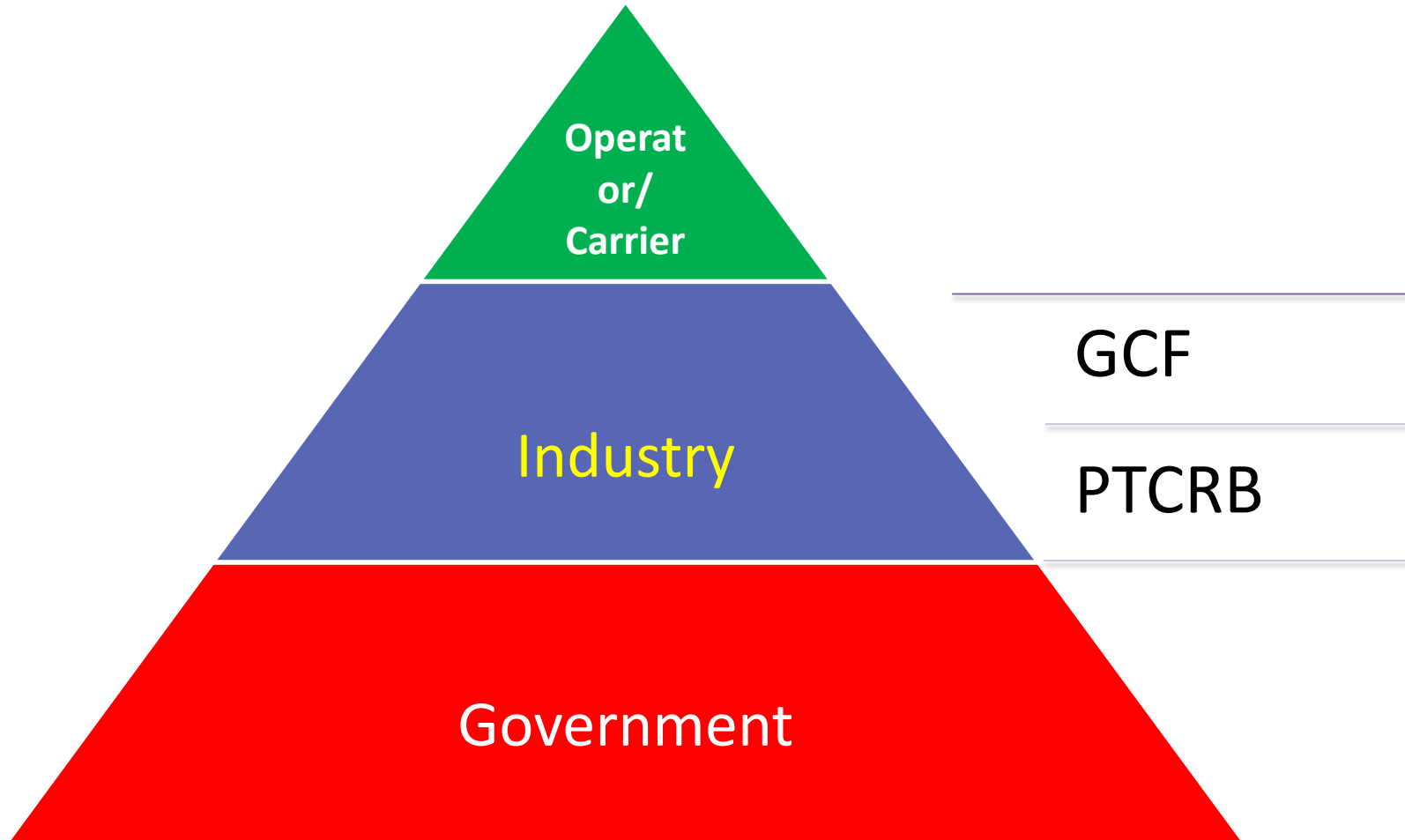
Content

- General
- GCF and PTECRB Certification
- Conformance Test Content and specification

General
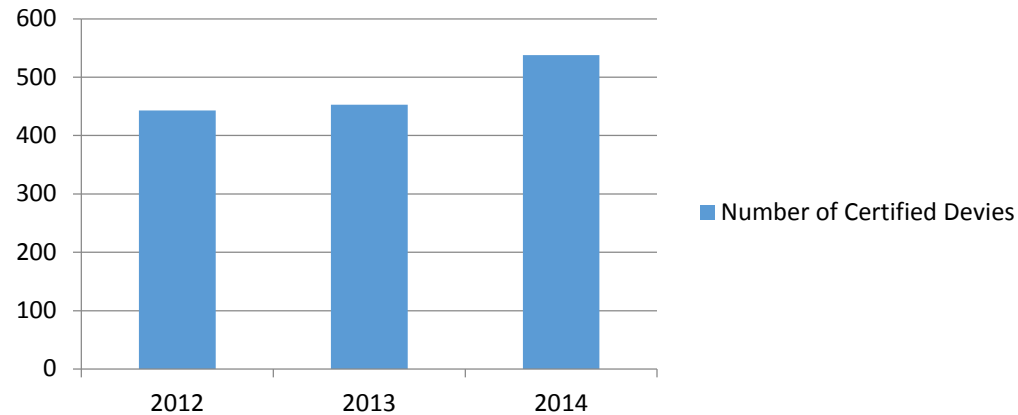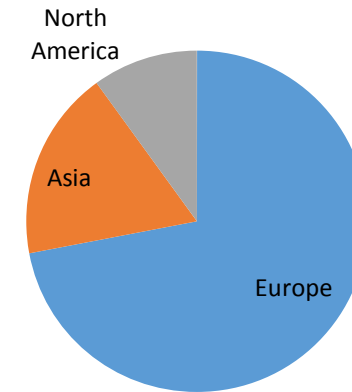
GCF (Global Certification Forum)

GCF Certified Devices

- Number of Certified Devies
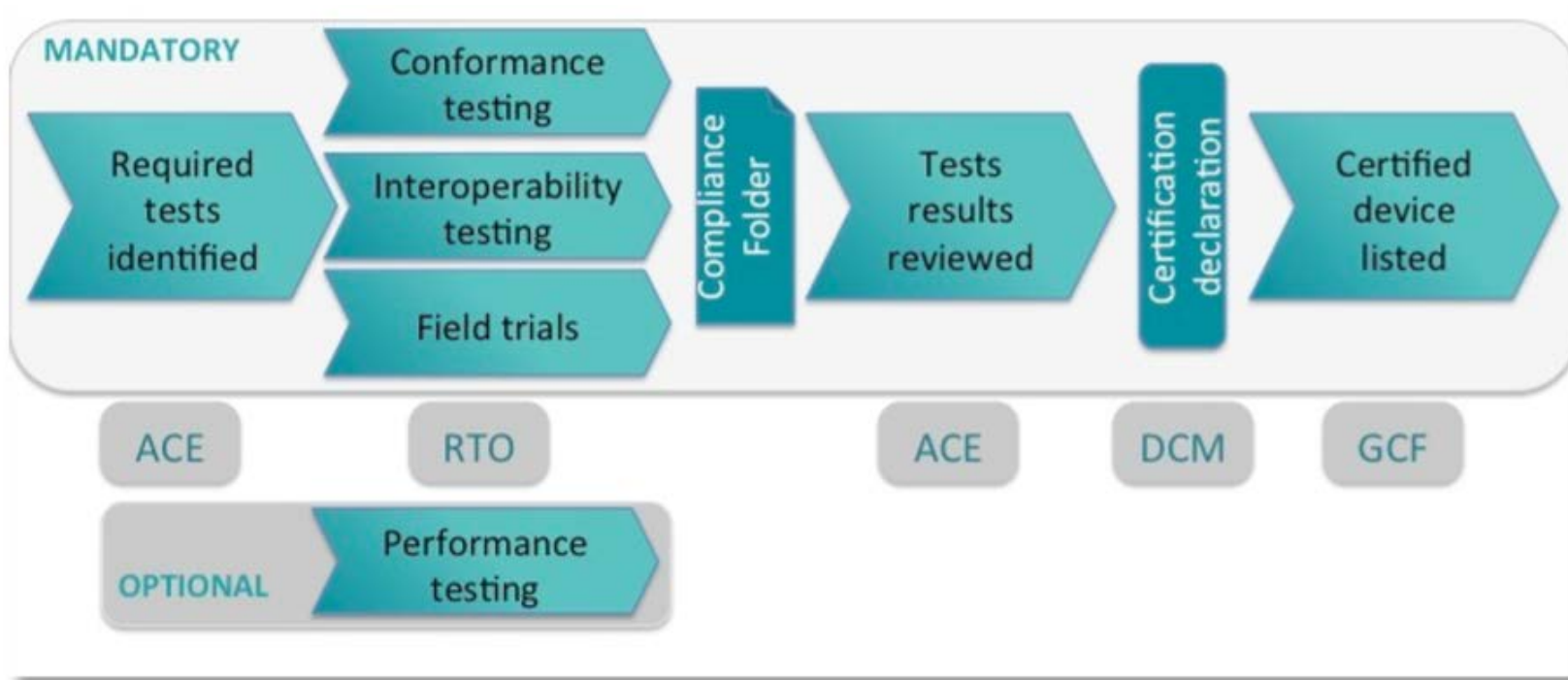
Test once,
use anywhere

This process is recommended for all manufacturers who wish to have their devices operating within the areas served by registered Operators, as all registered Operator full members require Certification

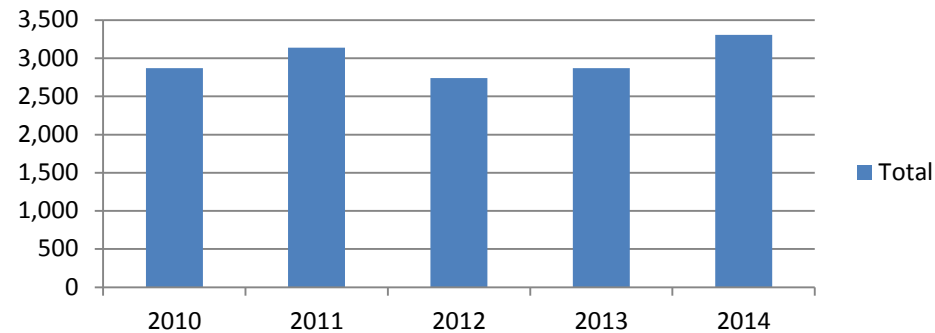- Certification procedure of GCF

PTCRB (PCS Type Certification Review Board)

Total Number of PTCRB Certified Devices

North America

A voluntary process by which all products are technically evaluated to meet the minimum requirements for registered Operators' networks.

PTCRB (PCS Type Certification Review Board)

End Products

Modules

Integrations

Notebooks

Device type in 2013

- End Products
- Modules
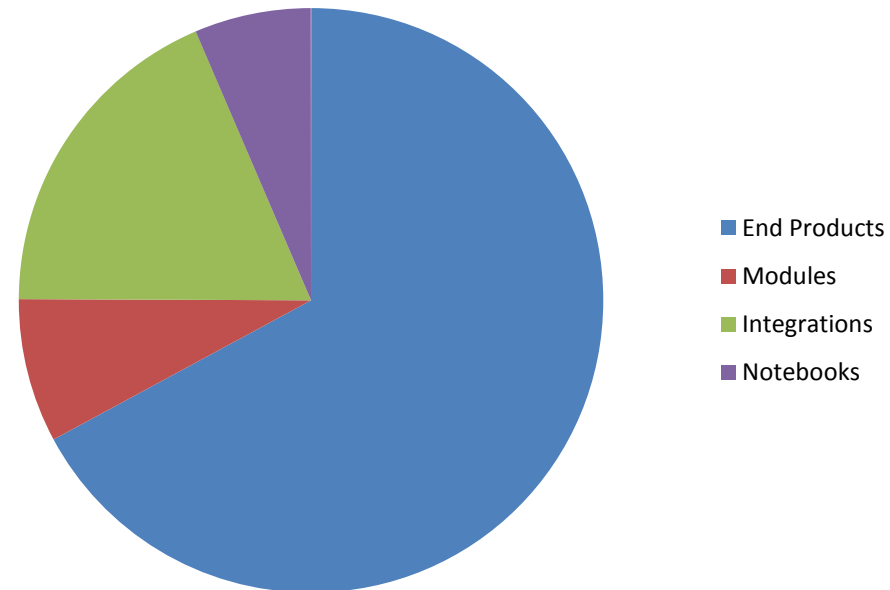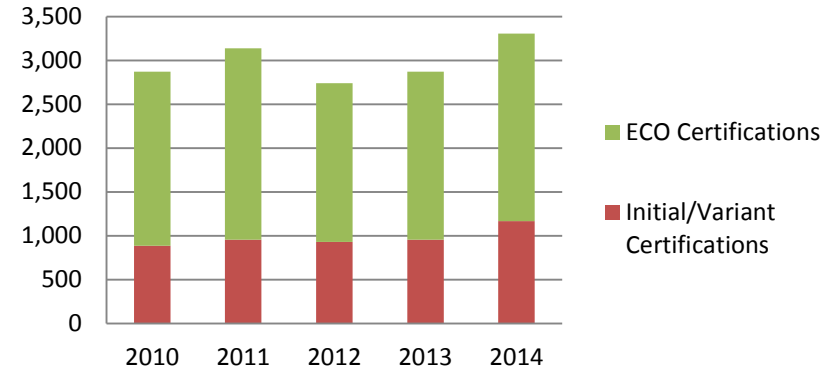- Integrations
- Notebooks

Certification procedure of PTCRB

- Manufacture
  - Certification Request Submission
    - Required information
  - Selection of Accredited Test Lab
  - Declarations
- Accredited Test Laboratory
  - Execute Test
  - Report

PTCRB Certified Devices

Certification Technical Requirement

NAPRD03	GCF-CC

Description for the technical requirements for Device Certification.
Intended to advise accredited laboratories and administrations on how to establish terminal equipment conformity with the reference specifications

Certification Technical Requirement

NAPRD03	GCF-CC

Version

- Format
- Applicability

- UEs submitted for certification are required to complete the execution of all applicable tests approved and published in one of the two most recent versions of NAPRD03 as of the date the mobile is to complete certification.

- V x.y.z
  - The first number indicates the main version number
  - The middle number is the major revision number
  - The last number is the minor revision number

PTCRB/GCF technical requirements

Test cases

Category "A":	Test fully available and fully validated, testing at an accredited test laboratory required
Category "B":	Testing at an accredited test laboratory with exceptions
Category "D":	Test is downgraded and is not a certification requirement
Category "E"	Test case is validated and results are provided to CTIA. Failure of DUT to pass test case will not cause loss of certification.
Category "N"	Not applicable
Category "P"	New test case not yet validated or a test case that has been downgraded for more than 45 days.

PTCRB TEST CASE STATUS

Category "A":	based on tests which have been specified by an appropriate SO and validated on commercially available test equipment
Category "B":	based on tests which have been specified by an appropriate SO and validated on commercially available test equipment with exceptions
Category "C":	based on tests which have been specified by an appropriate SO and validated on commercially available test equipment, but do not yet meet the Work Item or Test Case certification entry criteria
Category "D":	based on tests which have been specified by an appropriate SO from which validation or full status has been removed
Category "P"	based on tests which have been specified by an appropriate SO and not validated on commercially available test equipment
Category "N"	Test not applicable

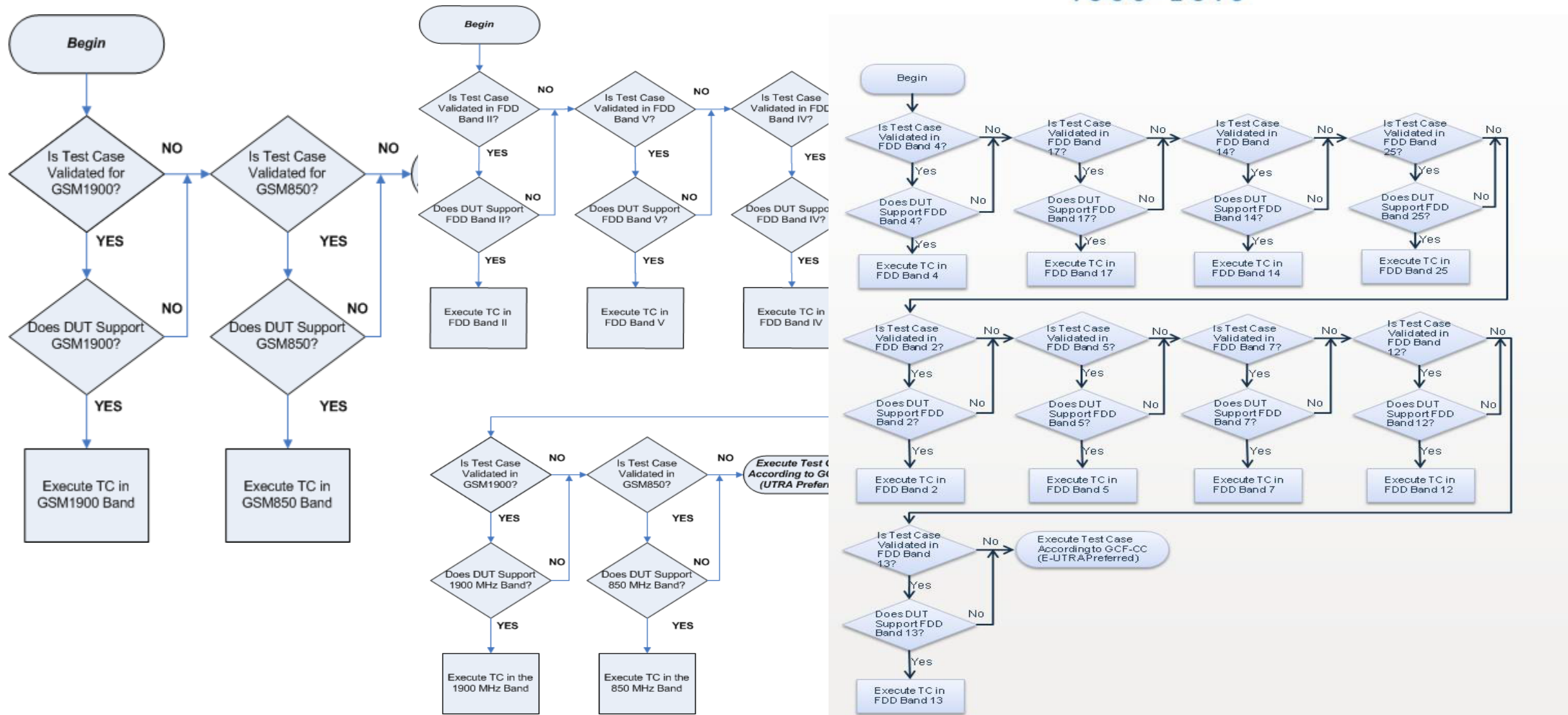GCF TEST CASSE STATUS

PTCRB/GCF technical requirements

Test Frequency Band

ALL	• the mobile shall be tested in all required Bands
Single	• that the applicable test case (e.g. protocol testing) must be tested according to the rules
I-RAT Single	• shall be tested in a single band combination.
Multi	• that a band combination is required
Blank	• the test does not require a bearer
RAT All	• that the applicable test case must be tested once in each supported RAT and in accordance with the rules

Frequency Band Selection

PTCRB/GCF technical requirements

Test Platform

- Accredited labs must use approved test platforms as listed on TC Database
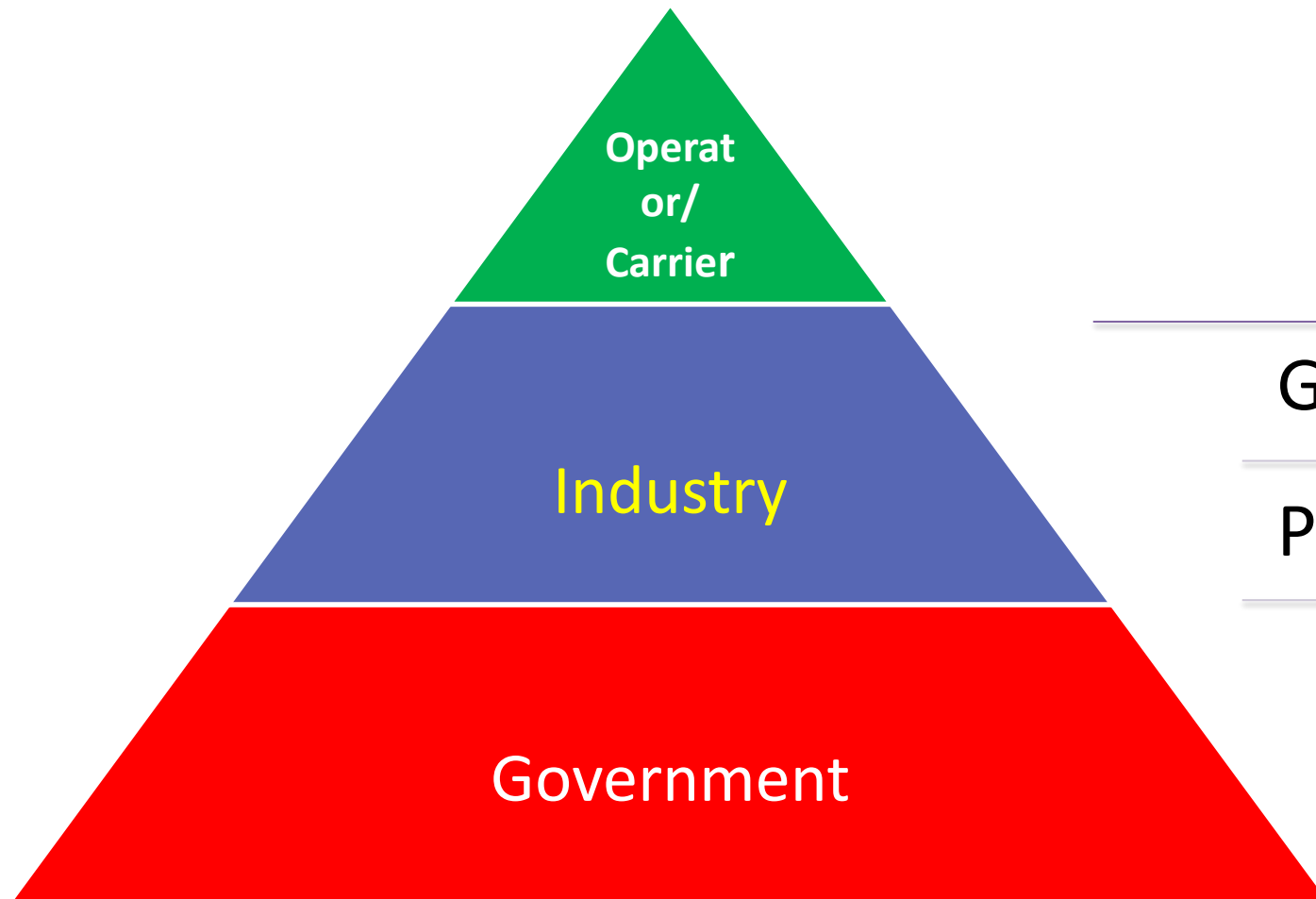

PTCRB TP

GCF TP

Content

- General
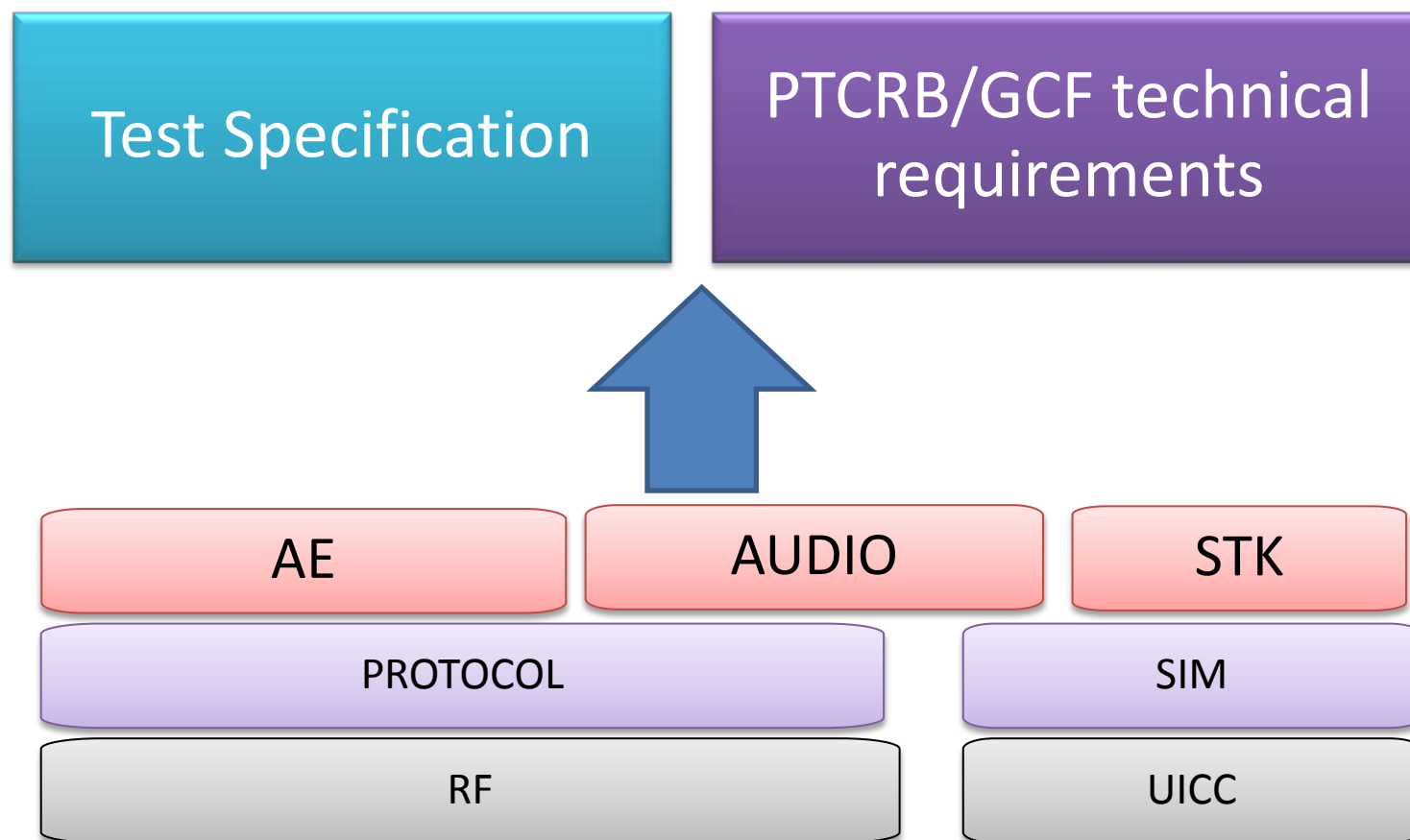- GCF and PTECRB Certification
- Conformance Test Content and specification

General

Test Content

PICS and Test Plan

PICS- Protocol Implementation Conformance Statement

- Contents of the UE capability Information Elements

PICS 3GPP
TS51.010-2

PICS 3GPP
TS36.523-2

Test Plan

- List of all the test cases need to be reported

LTE PROTOCAL
TEST PLAN

LTE RF/RRM
TEST PLAN

Test Content

RF

- transmission and reception
  - Phase error
  - Frequency error
  - Power
  - Channel rejection
  - Blocking
- Radio resource management
  - Cell Re-selection
  - Handover
  - Re-establishment
  - Random Access

GSM	WCDMA	LTE
• 3GPP TS 51.010-1 • Chapter 12-14, 16, 21,22	• 3GPP TS34.121-1	• 3GPP TS36.521-1 – RF • 3GPP TS36.521-3 – RRM

Test Content

UICC

- Physical characteristic
- Electrical characteristic
- Logical test

GSM	WCDMA	LTE
• 3GPP TS 51.010-1 • Chapter 27	• ETSI TS102 230/102 384	• ETSI TS102 230/102 384

Test Content

PROTOCOL

- Idle mode operations
- Layer2 signaling Procedure
- RRC connection management procedures
- EPS mobility management
- Circuit Switched Call Control (CC)
- EPS session management
- SMS
- E-call，ETWS

GSM	WCDMA	LTE
• 3GPP TS 51.010-1	• 3GPP TS 34.123-1	• 3GPP TS36.523-1

Test Content

SIM

- Subscription related tests (IMSI/ TMSI, Access Control - identification)
- Security (PIN , FDN, AoC)
- PLMN
- Subscription independent tests(phonebook, SMS,MMS)

GSM	WCDMA	LTE
• 3GPP TS 51.010-1 • Chapter 27	• 3GPP TS 31.121 USIM	• 3GPP TS 31.121

Test Content

STK/ USIM APPLICATION

- Initialization
- Terminal profile
- SIM command (display test , get inkey, get input)
- Data download
- Call control/ SMS control

GSM	WCDMA	LTE
• 3GPP TS 51.010-4 - STK	• 3GPP TS 31.124 – USIM APPLICATION	• 3GPP TS 31.124 – USIM APPLICATION

Test Content

AE

- MMS
- VT
- NFC
- DM

AE	
• **OMA-ETS-MMS-1_3** • **PoC** • **IMTC-3G 324M VT**	• **OMA-ETS-DM-V1_2** • **OMA-ETS-SUPL-V1_0/V2_0** • **ETSI TS 102 694/102 695 SWP/HCI**

Questions:

1. Which part of all the conformance test content have the longest test duration?

2. What rules does the test lab follow to decide the test frequency and test cases?

(Trainer information)

Trainer: Zhong Nan

E-mail: zhongnan@catr.cn

Department: CTTL GTE

Address: No.1212 Floor 12,Shouxiang Science Building,No.51 Xueyuan Road, Haidian District, Beijing, P.R.China 100191

THANK YOU !

中国信息通信研究院 http://www.caict.ac.cn