A simple Certification process…

Conformance

Interoperability

Field Trials

Mobile and IoT Device Certification in Latin America

Certification based on device features

5G-NR NSA & SA Options, bands, features (RF, RRM, Protocol, etc)

E-UTRA bands & category, EUTRA features (FDD/TDD, MBMS, iRAT, etc)

UTRA bands & category, UTRA features (DC HSPA, FDD/TDD, etc)

GERAN bands and Classes, GERAN features (GPRS/EDGE, SMS, Sup Services, etc)

Bearer agnostic features (IMS, RCS, SUPL, eSIM, MMS etc)

Certification for devices using a GCF certified module:
- Audio interface
- OTA antenna performance testing
- Power Supply (if voltage supplied is different)
- SIM interface
- Radiated emissions
- User interface (Supplementary Services, emergency, USIM, etc)
- Application enablers (RCS and UICC based NFC)

Categories of testing

- ## 3 major categories of testing are currently supported in GCF:

Conformance Testing
(Based upon standards &
validated test cases/platforms)

Field Trials
(Referencing
GSMA TSG PRD TS.11)

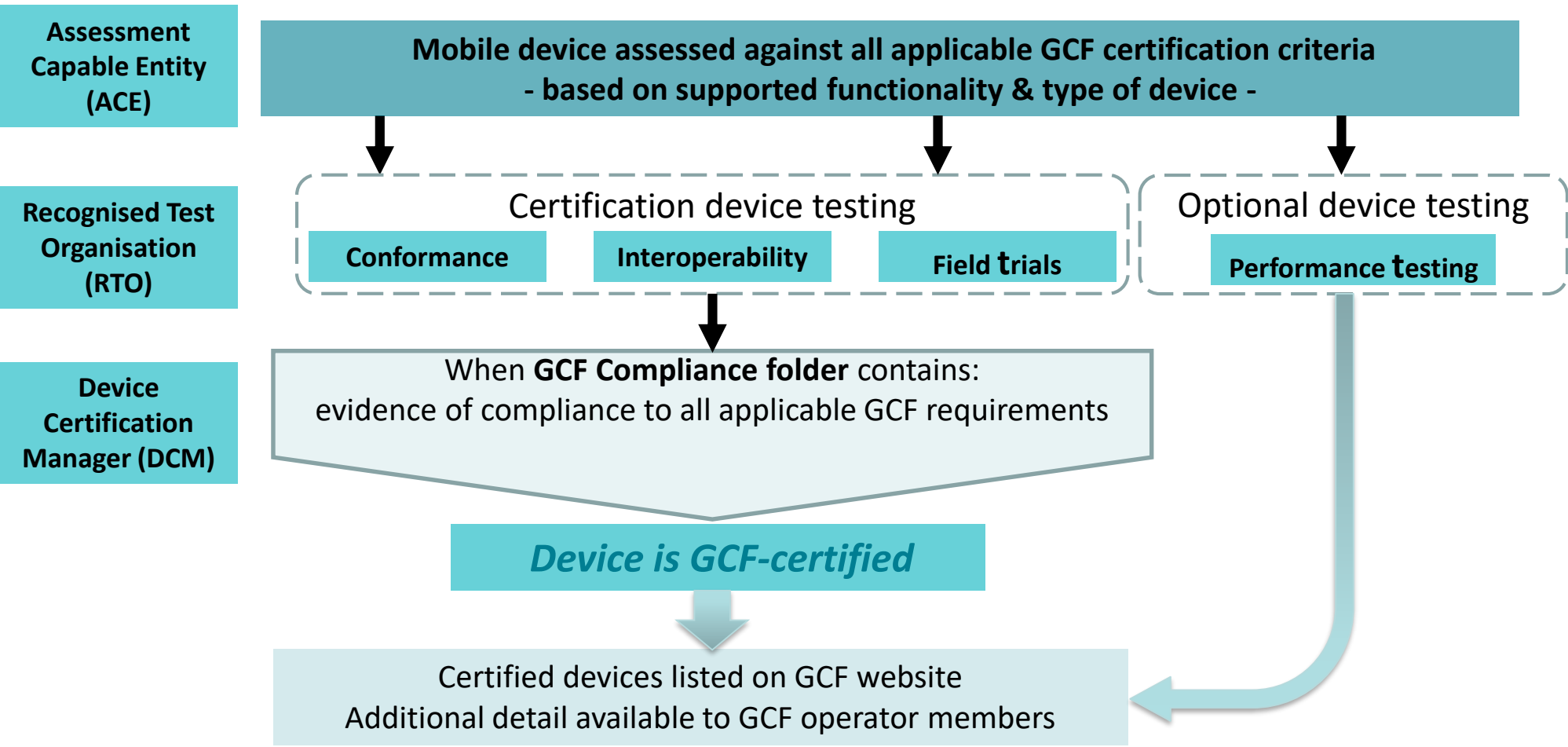**Interoperability Testing**

DEKRA

Telefónica

ACEs & RTOs

- **Assessment Capability Entities (ACEs)** are internal to OEM or 3rd party organisations that are available to work with the manufacturer to determine the overall scope of GCF certification for a particular product

- **Recognized Test Organisations (RTOs)** are 3rd party labs that meet GCF requirements for testing laboratories and are authorised to execute the Conformance, Interoperability, and/or Field Trial tests

Mobile and IoT Device Certification in Latin America

The GCF certification process

Assessment Capable Entity (ACE)

Recognised Test Organisation (RTO)

Device Certification Manager (DCM)

Mobile device assessed against all applicable GCF certification criteria - based on supported functionality & type of device -

Certification device testing

Conformance **Interoperability** **Field trials**

Optional device testing

Performance testing

When **GCF Compliance folder** contains: evidence of compliance to all applicable GCF requirements

Device is GCF-certified

Certified devices listed on GCF website
Additional detail available to GCF operator members

Conformance testing (Based upon standards & validated test cases/platforms)

Interoperability testing

Field trials (GSMA TS.11)

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Technical scope of GCF certification

or

Signaling protocol tests

RF and RRM tests

Conformance Testing

Live Network Trials
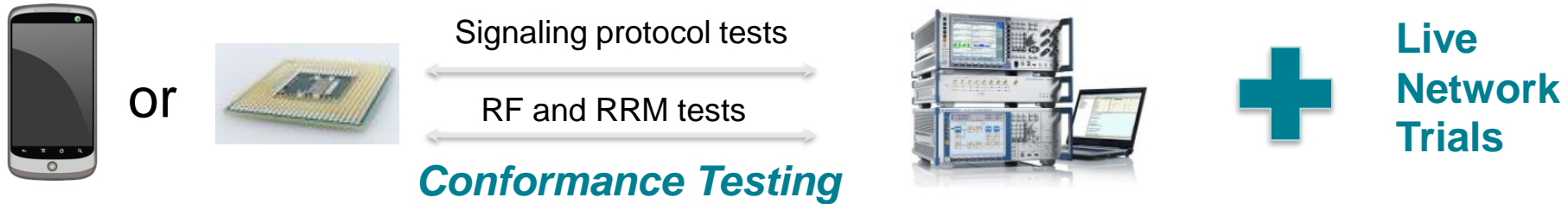
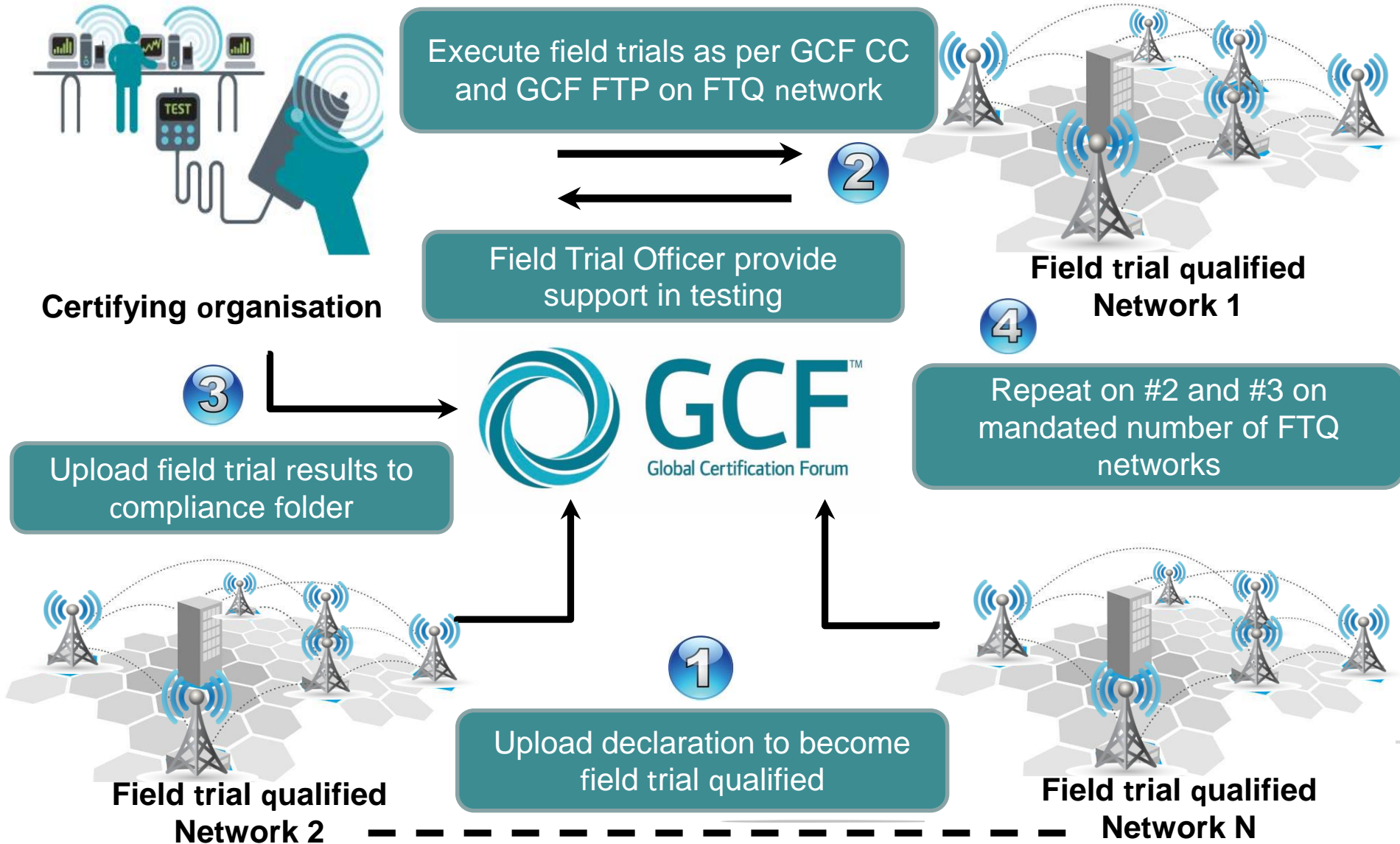| 5G-NR	LTE/ LTE Advanced	WCDMA	M-IoT	Mission Critical
• 3GPP Release 15 + • NSA Option 3 • SA Option 2 • RF • RRM • De-Mod / CSI • AS Protocol • NAS Protocol • IMS • Positioning • Field Trials	• Rel-8, Rel-9 • FDD and TDD Dual mode • ZUC algorithm • IMS and VoLTE • Carrier aggregation (Rel-10, Rel-11, Rel-12)	• FDD R99, Rel-4, Rel-5, Rel-6, Rel-7, Rel-8 • HSPA, 64 QAM, MIMO • DC-HSDPA • Ciphering for FDD Rel-7, A5/4 • Fast dormancy • Priority based reselection. • PPAC • Rx diversity • Antenna performance	• NB-IoT • MTC enhancements (Cat 0, M1) • Enhancements of M-IoT (planned)	• 3GPP MCPTT Services Client Operation Rel 13 (to be activated in Apr 2018)

< Inter-RAT and Inter-band (protocol) tests >

Mobile and IoT Device Certification in Latin America

Field trials

Execute field trials as per GCF CC and GCF FTP on FTQ network

(2)

Certifying organisation

Field Trial Officer provide support in testing

Field trial qualified Network 1

(4)

(3)

Upload field trial results to compliance folder

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Repeat on #2 and #3 on mandated number of FTQ networks

(1)

Upload declaration to become field trial qualified

Field trial qualified Network 2

Field trial qualified Network N

Network field trials testing

- Live over the air testing of service on real world networks over different frequency bands, RATs, and network infrastructure
- Ensures any compatibility issues with commercial networks are discovered and resolved prior to commercial launch
- Real time logging allows verification of key messages between UE and network elements
- There is confidence in the product, product configurations, SIM configurations, tested under different network conditions
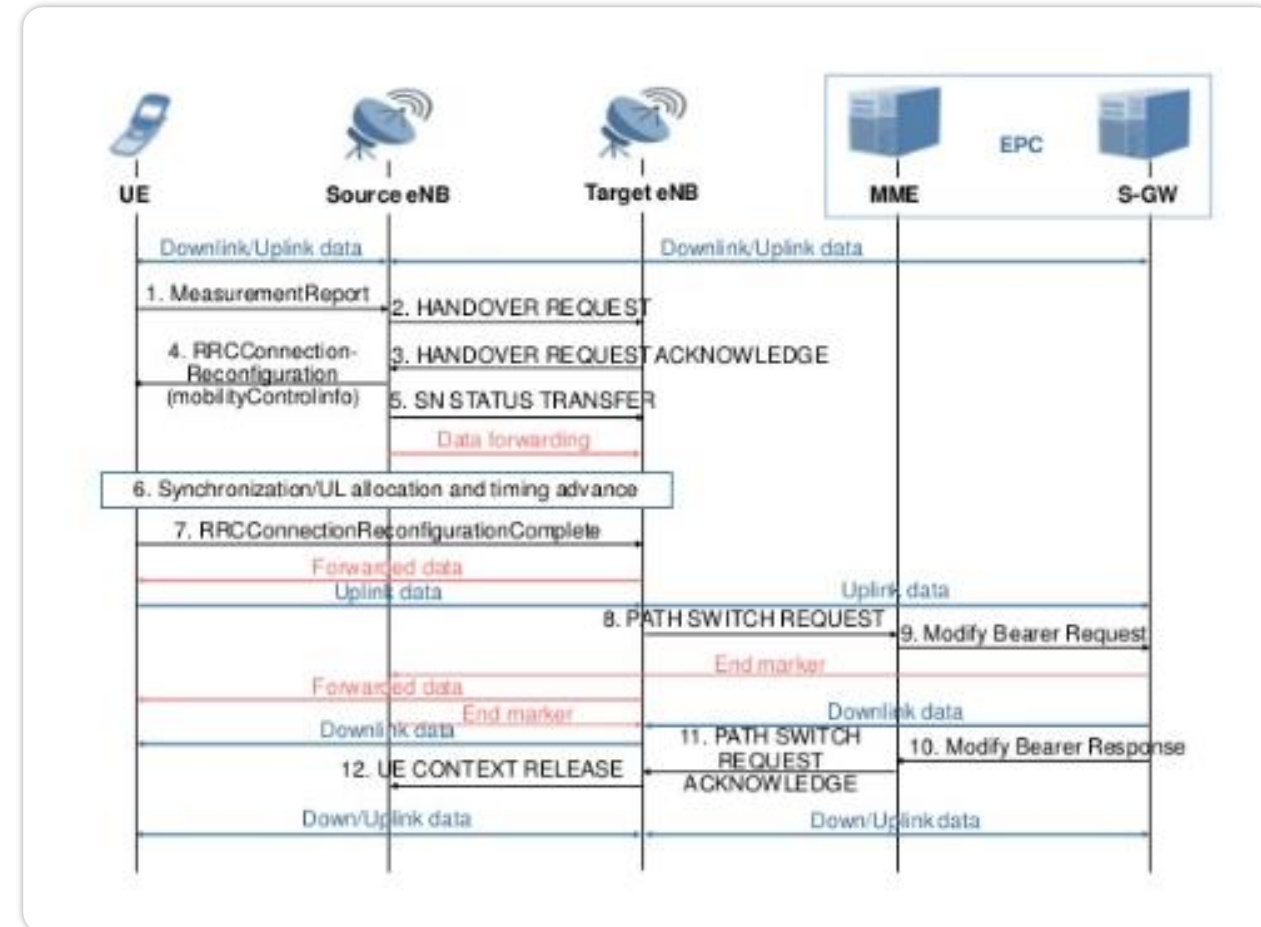
Field Trial Qualified Operator Support

Field Trial Officer: Each FTQ Operator assigns a Field Trial Officer and optionally a Deputy Officer that acts as primary liaison to Certifying Organisations wishing to conduct field trials and provide necessary information to complete the field trials

SIM Card Support: Availability of necessary provisioned SIMs to test the relevant services are arranged between the Field Trial Officer and Certifying Organisation

Non Disclosure Agreements: Any NDA's that are deemed required in order to share relevant information are executed by the FTQ Operator and Certifying Organisation directly

Basic Infrastructure & Features Support: Up to date information on network configurations is provided by FTQ Operator

Test Routes: Information of drive routes for each area of Field Trials are provided by FTQ Operator in their FTW Declaration to GCF

Certification Organisation Responsibilities

— **Test Preparation:** Interface with Field Trial Officer to arrange all necessary tools and information required in order to conduct the field trials over the particular network (SIM Card, Drive Routes Info etc).

— **Test Execution:** Execute all applicable test cases as defined in the GCF Certification Criteria (CC) PRD and as per the process defined in GCF Field Trial Procedures (FTP) PRD

— **Trace/Log Files:** The Certifying Organisation should collect and store trace/log files during execution of the Field Trials and make them available for review. Tests requiring log files are indicated in the Annex F5.X

— **Compliance Folder:** Upload all results, including trace/log files to the device compliance folder on the GCF Member's Portal

# Introduction of new work items

Test platform validation reports
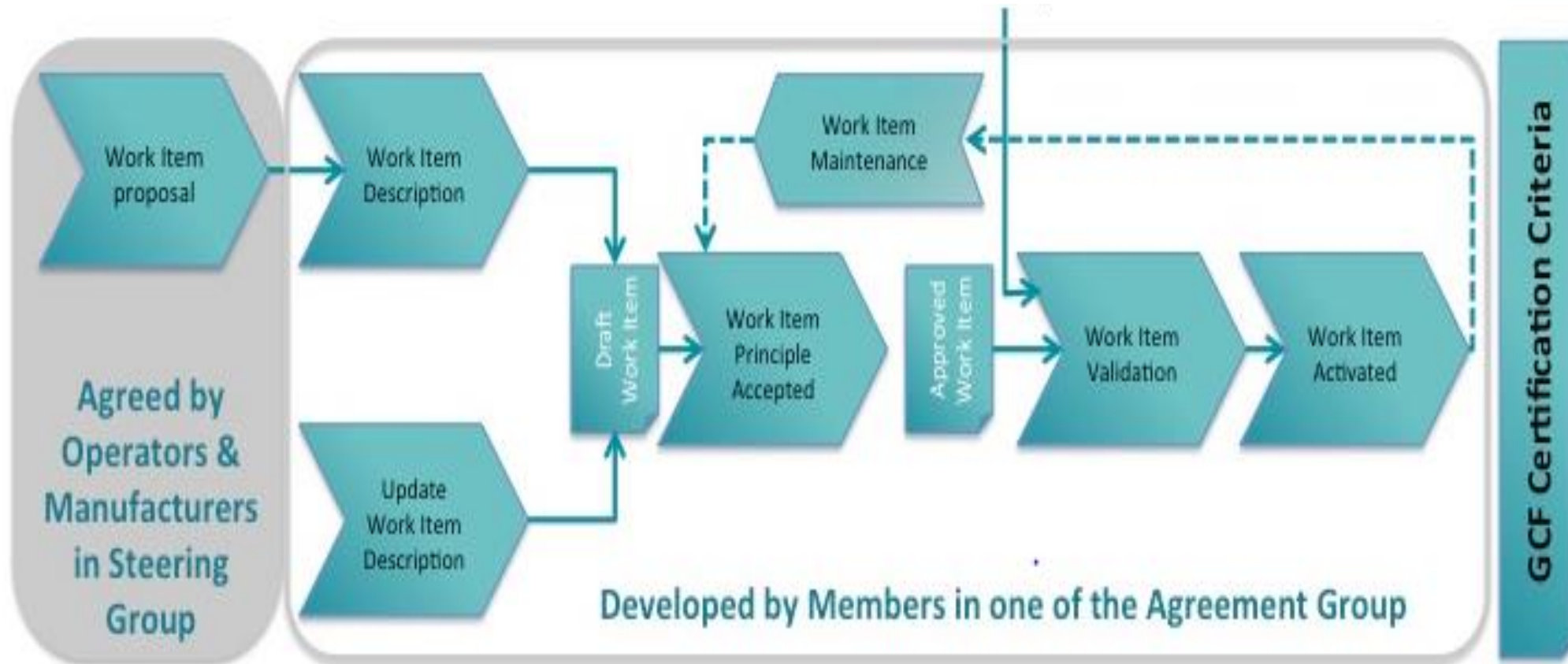
Conformance Assessment Table – Test Case Categories

➢ **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 (Downgrade)

➢ **Category P:** Based on tests which have been specified by an appropriate SO and not validated on commercially available test equipment (Provisional for future implementation)

➢ **Category N:** Test not applicable
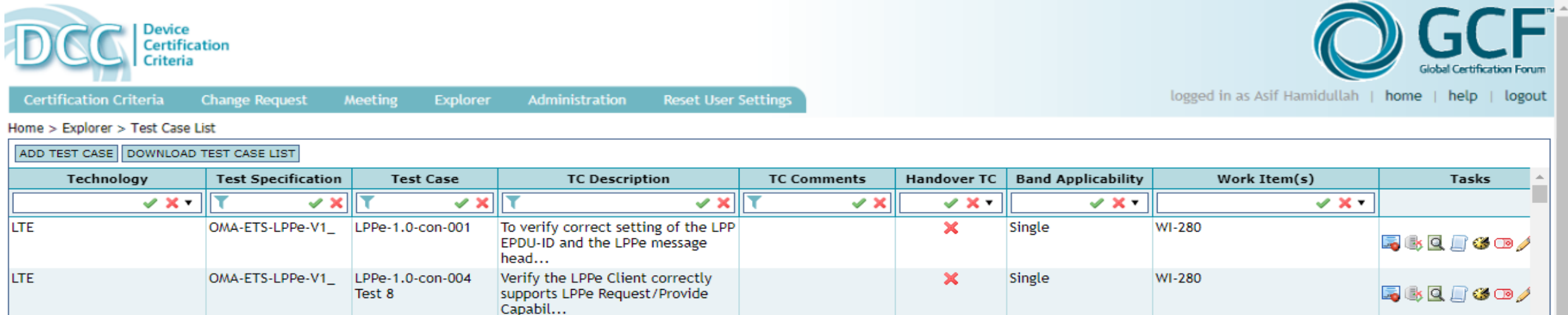
Mobile and IoT Device Certification in Latin America

GCF Test Equipment Validation Process
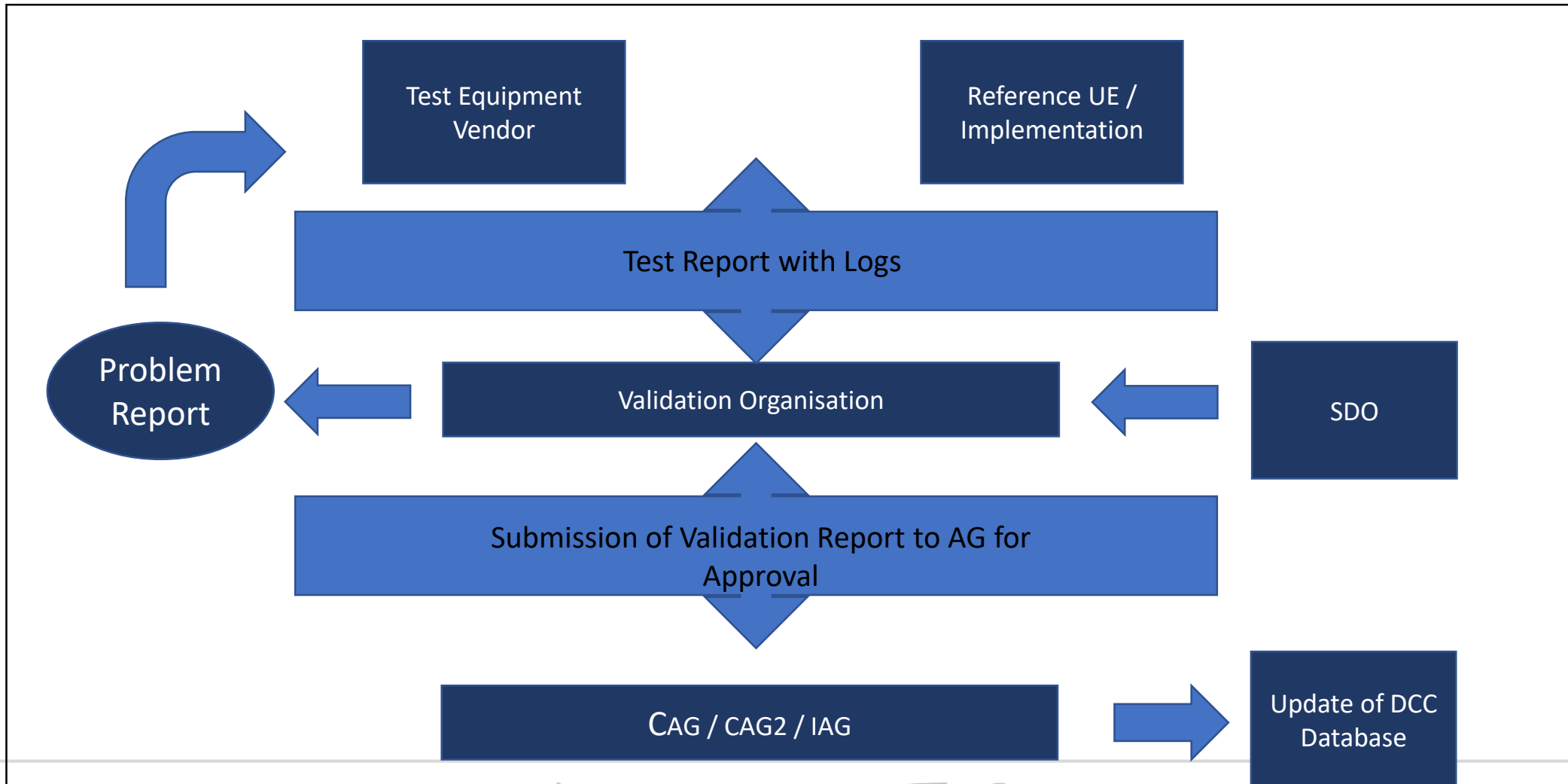
Device Certification Criteria Database

- The GCF Device Certification Criteria (DCC) Database captures all information associated with approved work items, their overall testing scope, timelines that is essential for the definition and management of the certification criteria of wireless products

- This includes list of applicable conformance test cases, their validation status, associated validated test platforms, test platform sw/hw configurations, validation reports work item project plan, and other information

- The Conformance Agreement Groups generate, review and approve Change Requests (CR's) to introduce new items, or modify existing items in the DCC (ex: downgrade of test cases), in order to ensure the certification criteria is meeting current industry requirements

- The DCC follows a quarterly release cycle (following an AG meeting) and is in synch with the GCF Certification Criteria PRDs which also follow the same release cycle

Home > Explorer > Test Case List

ADD TEST CASE   DOWNLOAD TEST CASE LIST

Technology	Test Specification	Test Case	TC Description	TC Comments	Handover TC	Band Applicability	Work Item(s)	Tasks
LTE	OMA-ETS-LPPe-V1_	LPPe-1.0-con-001	To verify correct setting of the LPP EPDU-ID and the LPPe message head...		✗	Single	WI-280	
LTE	OMA-ETS-LPPe-V1_	LPPe-1.0-con-004 Test 8	Verify the LPPe Client correctly supports LPPe Request/Provide Capabil...		✗	Single	WI-280	

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Certification News

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https://www.globalcertificationforum.org/news/events.html

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