

CDMA Certification Forum (CCF) Frequently Asked Questions



Q What is the CCF's mission?

A The CDMA Certification Forum, or CCF, is a partnership between CDMA operators and CDMA mobile station vendors to establish and maintain a core global terminal certification process that helps improve quality through consistent interoperability, conformance and performance testing.

Q What is the CCF's charter?

A To define and maintain a global standard certification test process to certify that CDMA2000 devices meet the requisite product conformance, network interoperability, and essential performance specifications that are dictated by international standards bodies.

Q Why was the CCF created?

A There are three primary factors driving the creation of the CDMA Certification Forum.

First, there is a universal industry consensus that the time and cost of bringing a CDMA device to market must be dramatically reduced to provide affordable wireless services to the global market in a more timely manner and to be competitive with other technologies.

Second, the conformance, interoperability and performance bar must be raised to ensure quality basic voice and data services can be delivered affordably to emerging markets.

Third, the need for clearly defined and prioritized test cases, enabled with readily accessible test resources must be universally adopted by operators and vendors worldwide to streamline the commercialization of devices – of all types and for all markets.

Q What is the relationship between the CCF and other industry groups, CTIA, CDG, 3GPP2, etc., and how do they complement each other?

A CDMA Development Group

- CCF and CDG are separate legal entities working together to reduce the cost and time it takes to certify CDMA devices worldwide, while helping to ensure product quality.

3GPP2

- CCF references 3GPP2 test specifications and submits draft test cases to the 3GPP2, as appropriate.

CDMA Certification Forum (CCF) Frequently Asked Questions



Regional Certification Programs

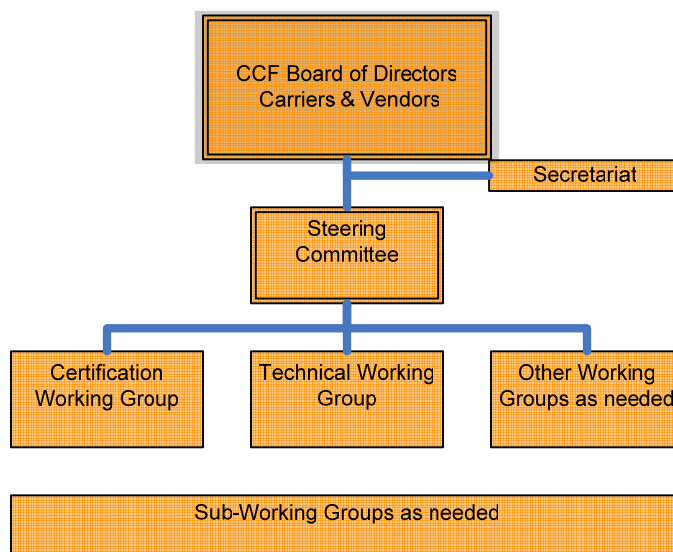
- CCF is working with regional certification programs, such as CTIA, to develop the foundation for a global certification program that is based on "state-of-the-art" test processes.
- CCF offers the core (essential) device certification specifications that other existing certification programs can build upon, to satisfy market, operator and device specific processes.

Global Certification Forum (GCF) / Open Mobile Alliance (OMA)

- CCF will work with the GCF and OMA to create common certification solutions above the air-interface dependent layers.

Q What is the organizational structure of the CCF?

A The CCF is a nonprofit corporation organized to define and implement a core global device certification process for devices using CDMA technology and to engage in such other related business as the Board of Directors may determine from time to time. As with any organization, the Board is primarily responsible for strategic level management of the corporation. The CCF established a Steering Committee responsible for day-to-day tactical management of the Corporation. The Steering Committee established the Technical and Certification Working Groups to define test plans and certification processes, respectively.



CDMA Certification Forum (CCF) Frequently Asked Questions



Q What is the benefit of the CCF to our industry?

A

Enhanced End-User Experience	Stable, Reliable And High-Quality Devices, Plus Services
Larger Addressable Market	Larger Selection of Devices For Great Number Of Markets
Greater Competitiveness	Faster Acceptance Of New Functions And Features
Greater Focus On Product Differentiation	More Time Available To Test High-End Applications
Enhanced Value Proposition	Better Quality, Reduced Time-To-Market And Lower Costs

Q What is the benefit of the CCF to me as a device manufacturer?

A

Device Manufacture Benefits	Rationale
Reduced Time-To-Market	Issues Are Flushed Out Before Certification Cycle
Certification Tests Incorporated Into R&D	... Rather Than R&D Being Part Of Certification
Local Availability Of Test Resources	Qualified Labs In Most Any Market To Serve All Markets
Clearly Defined Certification Process	Navigates And Prioritizes 3GPP2 Specification Maze
Consistent Global Core Certification Process	Reduces Multiple Certification Cycles

CDMA Certification Forum (CCF) Frequently Asked Questions



Q What is the benefit of the CCF to me as a service provider?

A

Service Provider Benefits	Rationale
Reduced Operating Costs	Defer Routine Handset Screening To Third Party Test Lab
Scalable Test Solution	Higher Capacity Test Process Allows More Handset Models
Increased Handset Selection	All Handsets Are Ready For Carrier Acceptance Tests
Higher Product Quality	All Handsets Are Tested To Highest Common Standard
Enables SIM/R-UIM Distribution Model	Same Test Model As GSM – Lab & Field IOT
Uniform Global Core Certification Process	Handsets Are Certified For Multiple Markets
Greater Market Differentiation	Lab Resources Are Made Available For Feature Development
No Cost To Implement	Certification Costs Are Borne By Handset Vendor

Q What is the benefit of the CCF to me as a test equipment vendor?

A

Test Equipment Vendor Benefits	Rationale
Uniform Global Core Certification Process	Industry-Prioritized Test Cases
Clearly Defined Test Cases	Objective Validation of Test Platform Functionality
Increased Focus on New Services	Test Resources Are Available For Testing New Features

CDMA Certification Forum (CCF) Frequently Asked Questions



Q What is the benefit of the CCF to me as an infrastructure manufacturer?

A

Infrastructure Vendor Benefits	Rationale
Reduced IOT Costs	Third Party Test Labs Certify Devices Before IOT
Increased Test Capacity	IOT Resources Are Not Flushing Out Basic Modem Issues
Increased Focus on New Services	Lab Resources Are Available for Feature Development
Increased Customer Support	Focus on Value Add Performance Testing
Higher Quality Product Entering Test Program	All Handsets Certified to Highest Common Standard

Q Will handsets also have to go through the traditional CDG certification process?

A It depends upon the requirements of the operator. CCF provides cost-conscious operators another tool to help make their device qualification process more *efficient* and *comprehensive*. CCF can either provide a stand-alone certification process or compliment the CDG system test process. The decision as to whether or not the CCF process is sufficient is left to the operator.

Q Will the CCF provide certification for over the air testing?

A The CCF certification process provides for over-the-air interoperability and stability & performance testing.

Q How does the CCF impact operator acceptance testing?

A It is not the objective or the intent of the CCF to provide a comprehensive test process that is inclusive of all carrier test requirements. The CCF recognizes and appreciates the need for carriers to differentiate their services and define handset test requirements over and above those of the CCF certification test process to meet the particular demands of their specific markets.

CDMA Certification Forum (CCF) Frequently Asked Questions



Q How does the CCF certification process compare to the CDG or CTIA certification process?

A There are a many similarities but also important differences between the proposed CCF, CDG and existing CTIA device certification processes.

They are similar in that they both:

- Define a uniform set of core test processes common to multiple operators
- Evaluate CDMA devices against a clearly defined and agreed upon set of performance metrics.
- They allow CDMA operators to focus their engineering resources towards operator specific value added testing.

Important differences include:

- CCF offers a more comprehensive certification process that includes essential stability, performance and field interoperability testing.
- CCF offers operators a more efficient device qualification process that is specific to the operator's network environment.
- CCF is designed to serve the needs of operators across the globe, whereas CTIA certification testing is designed to serve the needs of Operators in the United States.

Q When will the CCF be operational?

A The CCF will begin certifying CDMA devices in the second half of 2005.

Q Will the CCF have a full time staff?

A Possibly, but at this time the CCF is staffed by members of the participating companies.

Q How will the costs to operate the CCF be paid?

A The fundamental operating costs of the CCF will be funded through membership and certification fees. The cost to develop and validate the certification test process will be borne by contributions made by the participating members who are defining the future standard for certifying CDMA devices. The recurring costs to operate the certifying labs and to test the devices for commercial availability will be borne by the benefiting party.

Q I am a device manufacturer. Can my lab be certified to perform CCF certification testing?

A It is the role of the CCF Certification Group to develop, implement and sustain a device certification and lab authorization process that ensures product interoperability and conformance standards are met before CDMA devices reach the market. It will not be the role of the CCF Certification Group to select which labs will be evaluated. Any lab that meets the established criteria and pays the nominal authorization fee will be authorized by the CCF to conduct CCF certification testing. The acceptance of those test results will

CDMA Certification Forum (CCF) Frequently Asked Questions



be at the discretion of the benefiting operator. We expect competitive forces will ensure service quality and determine the viability of each authorized test lab.

Q Who should participate within the CCF?

A CDMA Service Providers, Operators, Carriers or MVNOs
CDMA Device Manufacturers or Vendors
CCF Certification Laboratories
Test Solution Providers
Baseband & RF Chipset Providers
CDMA Network Infrastructure Vendors
Strategic Partners (Defined and Identified by the Operator Group)

Q What working groups will there be in the CCF and what will their responsibilities be?

A

Technical Group

- Ensure that the common test requirements defined by the GHRC are validated according to appropriate international specifications
- Assist in the authorization of test facilities to conduct certification testing as defined by the CCF
- Provide technical guidance to the CCF to readily enable adoption and implementation of evolving CDMA-based technologies.

Certification Group

- Define and maintain global core certification test processes based upon a test plan created by the Technical Group to ensure terminal conformance to feature and function requirements set forth by the GHRC.
- These processes must allow for and support local market variations.
- Define, publish, and implement a set of process documents including test platform validation, handset certification, lab authorization and subject matter expert certification.
- Granting the "certification seal"
- Defining and convening as necessary a council to resolve disputes over certification

CDMA Certification Forum (CCF) Frequently Asked Questions



Q Why do we need another industry group? Can't the CDG or 3GPP2 drive this effort?

A Today, no other industry group is properly positioned to establish and maintain a core global terminal certification process that helps ensure CDMA2000 device quality and network compatibility across the globe. The CDG mission is to lead the rapid evolution and deployment of CDMA-based systems, based on open standards and encompassing all core architectures, to meet the needs of markets around the world. This mission recently began to include defining specific handset feature and functions to meet the demands of the global CDMA market. It was decided that the industry would be better served if the certification of handsets against these features and functions was conducted by a separate entity. The 3GPP2 charter is to develop, validate, and verify functional and performance specifications for CDMA2000 devices, but not the process by which a device is certified as satisfying these specifications. The CCF provides this process.

Q How will the CCF impact cabled inter-op testing on commercial infrastructure?

A The objective of the CCF certification program is to define a process by which to conduct as much parametric performance and signaling conformance testing as practical on commercial test equipment. However, there are features and functions that need to be evaluated against commercial infrastructure. The CCF does provide for evaluating core features and functions on devices incorporating established technologies on infrastructure in a commercial over-the-air environment. Evaluating new features or functions on devices incorporating emerging technologies is best conducted on commercial infrastructure in a cabled environment. The decision on the proper test environment for the features and functions on a given device is left to the operator, handset vendor, and network provider.