



NFC Forum Certification Policy

Rules and Procedures for the Certification Program

NFC Forum™

Version 1.5

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1 Introduction

This document defines the policies that govern the operation of the NFC Forum Certification Program. The policies define what can be certified, what it means to be certified, and the processes for achieving and maintaining certification. These policies also define the obligations of the Suppliers of Certified Implementations, including both:

- A requirement for the Supplier to warrant and represent that the Certified Implementation meets the Applicable Certification Requirements, which include conformance to the NFC Forum Specification(s), as these specifications are interpreted by the NFC Forum.
- A result of “Pass” from the Certification Tests that are based on the currently authorized versions of the approved test tools and Test Specifications listed on the NFC Forum website.

1.1 Purpose

This document is intended primarily for the Supplier looking to certify a device and the test laboratory planning to provide testing services. This policy, in conjunction with the Device Requirements [DEVREQS], Certification Agreement and Certification License Agreement, constitutes a complete set of requirements and obligations for achieving certification. The Buyer intending to procure Certified Implementations will also find this document useful for understanding what can be expected from a Certified Implementation.

The NFC Forum Certification Program is not intended to impose any constraints on the way in which conformance is achieved, nor is it intended to constrain whether or how Certified Implementations are integrated into higher level products.

For example, an NFC Forum Implementation MAY be developed by a laptop computer vendor as a module for integration into one or more ranges of laptops. The laptop vendor MAY choose to certify the module and MAY also choose to certify one or more of the ranges of laptops in which the module is incorporated. The laptop vendor might also choose to sell the certified module for incorporation into a second vendor’s laptops, which themselves MAY then be certified by the second vendor.

It is also possible that the developer of the module MAY never offer it for sale as a separate product.

The NFC Forum Certification Program does not constrain the way in which a Certified Implementation reaches the end customer but does allow for products that incorporate implementations to be certified without unnecessary technical or administrative effort.

In this document the term *Certified Implementation* is used to refer to any product that is certified. In the laptop example mentioned above, both the certified module and each certified laptop incorporating that certified module would be referred to as Certified Implementations and listed in the Certification Register.

The following elements, while deemed necessary for the successful deployment of an NFC Compliant Device, are currently outside the scope of the NFC Forum Certification Program:

- Certification of NFC Forum Tag Types
- Regulatory requirements and government approvals
- Application layer certification.

The NFC Forum Certification Program is available only to NFC Forum member companies.

1.2 References

1.2.1 Normative References

[DEVREQS]	NFC Forum Device Requirements, Applicable version as identified by a Certification Release, NFC Forum
[ISO/IEC_17025]	ISO/IEC 17025, General requirements for the competence of testing and calibration laboratories, 2005, ISO/IEC
[RFC2119]	Key words for use in RFCs to Indicate Requirement Levels, RFC 2119, S. Bradner, March 1997, Internet Engineering Task Force

1.2.2 Informative References

[ISO/IEC_9646]	ISO/IEC 9646, Open Systems Interconnection – Conformance testing methodology and framework, 1995, ISO/IEC
[LABREQS]	NFC Forum Authorized Laboratory Requirements Latest version of the NFC Forum Authorized Laboratory Requirements available to all NFC Forum members, NFC Forum
[MAINTPROC]	Test Case and Document Maintenance Process Latest version of the Test Case and Document Maintenance Process available to all NFC Forum members, NFC Forum
[NCIRPGDE]	NCIRP (NFC Forum Issue Resolution Panel) Guide, Latest version of the NCIRP Guide available to NFC Forum members, NFC Forum

1.3 Administration

The NFC Forum Certification Policy is supported by the Near Field Communication Forum, Inc., located at:

401 Edgewater Place, Suite 600
Wakefield, MA, 01880

Tel.: +1 781-876-8955

Fax: +1 781-610-9864

<http://www.nfc-forum.org/>

The NFC Forum, Inc. maintains this policy.

1.4 Special Word Usage

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

1.5 Name and Logo Usage

The NFC Forum *Certification Mark License Agreement* defines the terms and conditions under which the NFC Forum Certification Mark MAY be used on and in relation to Certified Implementations.

1.6 Intellectual Property

This document conforms to the Intellectual Property guidelines specified in the NFC Forum's *Intellectual Property Rights Policy* (<http://nfc-forum.org/wp-content/uploads/2013/11/NFC-Forum-IPR-Policy.pdf>), as outlined in the NFC Forum *Rules of Procedure* (<http://nfc-forum.org/wp-content/uploads/2013/11/NFC-Forum-Rules-of-Procedure.pdf>).

1.7 Glossary

Accreditation

The process by which a third-party accreditation body assesses the compliance of an organization to a process standard. For the purposes of the NFC Forum Certification Program, Accreditation amounts to conformance to the standard [ISO/IEC_17025] and is awarded by accreditation bodies that are members of the International Laboratory Accreditation Co-operation (ILAC) and that conform to the ILAC Multilateral Agreement for Recognition (MLA).

Authorized Test Laboratory

A laboratory that has satisfied and continues to satisfy all requirements set in Section 11 of this document, and is thereby authorized to provide certification testing services to Suppliers.

Applicable Certification Requirements

For a particular product or Certified Implementation, this is the complete list of items in force or active at the time of submission of Certification Information to the Certification Administrator. See Section 4.2.

Certification Administrator (CA)

The organization appointed by the NFC Forum to manage the day-to-day operations of the Certification Program in accordance with the policies defined in this document.

Certificate

A document (issued to Suppliers) that formally declares that a device is a Certified Implementation.

Certification Agreement

The agreement between the Supplier and the Certification Administrator (CA) that defines the certification service to be provided and contains the legal commitment by the Supplier to the conditions of the Certification Program.

Certification Information

The complete set of information about a product that is submitted to the Certification Administrator (CA) in support of an application for certification.

Certification Mark License Agreement (CMLA)

The agreement between the Supplier and the NFC Forum that contains the legal commitment by the Supplier to the conditions for the use of the NFC Forum Certification Mark.

Certification Register

The official list of all Certified Implementations and related information that is maintained by the Certification Administrator (CA) and made available on the Certification Program website.

Certification Release

The NFC Forum might publish new versions of its Specifications and will collect a set of them into a consistent group to aid product procurement, development and certification. Each such group is called a Certification Release. A Certification Release's applicable specifications are documented in [DEVREQS] (see Section 4.1).

Certification Testing

Testing that an NFC Forum Implementation is REQUIRED to undergo to achieve certification.

Certified Implementation

An active NFC Forum Implementation that has successfully completed the certification process and for which the Supplier has been notified in writing by the Certification Administrator (CA) that certification has been achieved.

Conformance Testing

Set of tests defined for the purpose of determining whether an implementation complies with the set of specifications defined by the NFC Forum.

Implementation Conformance Statement (ICS)

A checklist of the capabilities supported by an NFC Forum Implementation. The ICS provides an overview of the features and options of the Specifications that are implemented, including the modes of operation that the product supports. See [DEVREQS]. The ICS is used to select and parameterize test cases and serves as an indicator of basic interoperability between different products; see [ISO/IEC_9646][NCIRPGDE]. An ICS for a protocol is usually known as a PICS (Protocol Implementation Conformance Statement).

Implementation Conformance Statement Template

The template Implementation Conformance Statement (ICS) document that is available from the Certification Program website and that is filled in by a Supplier to create an ICS. The [ISO/IEC_9646]term in [NCIRPGDE] for the ICS Proforma is “PICS Proforma”.

Interpretation

A decision made by the NFC Forum NCIRP (NFC Forum Issue Resolution Panel) that elaborates or refines the meaning of a device specification in [DEVREQS], of an NFC Forum Specification, or of an external standard referenced by either of them. An Interpretation is one possible outcome of a Problem Report (PR).

Interoperability Testing

Set of tests that are followed in order to determine whether a product interacts successfully with other products to comply with a set of functionalities specified by the NFC Forum.

Implementation Under Test (IUT)

The entity being tested to a functionality.

IUT Test Plan

The list of parameterized test cases applicable to the IUT. This list is an outcome of the NFC Forum Test Specification, TCCL (Test Case Category List), and the Supplier’s ICS documents. Each IUT within an NFC Forum Implementation has its own IUT Test Plan.

NFC Forum Certification Issue Resolution Panel (NCIRP)

The NFC Forum committee responsible for responding to Problem Reports (PRs) and Notices of Non-compliance.

NFC Forum Component

An element or part of a NFC Forum Implementation (e.g., antenna, protocol stack, etc.).

NFC Forum Device Requirements

The definition of the parts of the NFC Forum Protocol Stack that are REQUIRED to be present in a product for it to be eligible for certification. NFC Forum Device Requirements include separate definitions for Peer Mode, Reader/Writer Mode, and Card Emulation Mode, and defines the Certification Release. See Section 4.1.

NFC Forum Functionality

A set of features defined in the NFC Forum Specifications.

NFC Forum Implementation

The combination of hardware, software and mechanical components that together deliver NFC Forum Functionality and that meets the requirements defined in [DEVREQS].

NFC Forum Test Specification

The set of tests and testing-related information that the NFC Forum uses to confirm the compliance of an Implementation Under Test (IUT) to the corresponding NFC Forum Specifications.

Problem Report (PR)

A description of a question about clarification, intent, or correctness related to a specification or a test case. If a PR is accepted by the NCIRP, the PR will be resolved into an Interpretation or a Test Case Deficiency (TCD).

Specifications

The detailed technical documents that are published by the NFC Forum and that define the radio frequency and protocol capabilities and behaviors that deliver NFC functionality. The Specifications MAY include, by reference, specifications and standards published by other organizations.

Supplier

A product vendor who is interested in or applying for certification, or has certified a product in the NFC Forum Certification Program.

Test Group

A set of test cases grouped together by the NFC Forum to be the smallest set available for inheritance of test results.

Test Release

The NFC Forum MAY publish new versions of its Test Specifications and, when they are published, will collect the new versions into consistent sets to aid product certification and testing. Each such set is called a Test Release.

Test Track

A test track involves conformance testing, interoperability testing, or a combination of the two.

Test Case Deficiency (TCD)

An error in an NFC Forum test case that is agreed by the NCIRP to be causing an IUT to produce an incorrect result that impacts the IUT's certification. A Test Case Deficiency is one possible outcome of a Problem Report.

Test Case Categories List (TCCL)

A list of test cases categorized in terms of the conditions under which they are to be used in Certification Testing (see Section 8.3.1).

1.8 Language

The NFC Forum Certification Program documentation and website are written in standard American English.

All certification forms **MUST** be completed in English, and all Certification Information and other information provided to the Certification Administrator in connection with certification **MUST** be in English.

1.9 Website

The Certification Program website is available at <http://nfc-forum.org>; look for a link to the Certification Program.

2 Scope

The purpose of the NFC Forum Certification Policy document, this document, is to provide guidance in relation to the NFC Forum Certification Program.

The NFC Forum Certification Program provides for certification of NFC Forum Implementations that meet the requirements defined in [DEVREQS].

In this document the term “certification” applies to and is limited to the NFC Forum Functionality of a Certified Implementation, as claimed by the Supplier in the Certified Implementation’s Implementation Conformance Statement (ICS).

Certification for NFC Forum Components is not available in this version of the program, but might be included in a subsequent version.

3 Certification Process

The NFC Forum Certification process is divided into three phases:

- [Preparation](#)
- [Certification Testing](#)
- [Reporting and Acceptance](#)

These phases are described in the following sections.

3.1 Preparation

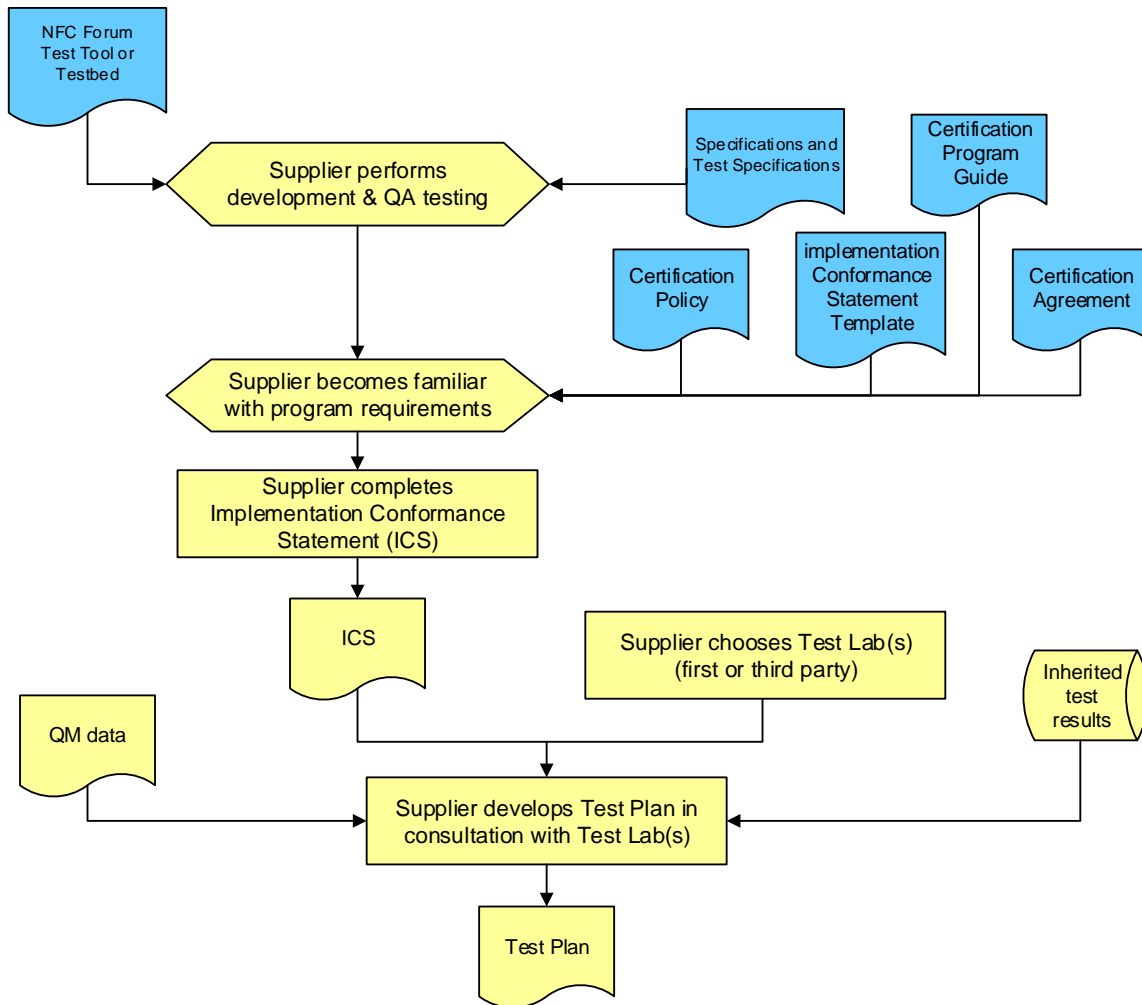


Figure 1: Certification Process: Preparation

Prior to registering for certification, it is RECOMMENDED that the supplier perform internal development and quality assurance testing using:

- Validated NFC Forum test tools and testbeds (see Section 8.2)
- The NFC Forum Test Specifications (go to <http://nfc-forum.org> and look for a link to the Certification Program)
- Any additional verification methods the Supplier considers appropriate

to ensure that the product meets the Applicable Certification Requirements and is ready for entry into the Certification Program. Participation in NFC Forum interoperability testing events is strongly RECOMMENDED.

In addition, the Supplier SHOULD become familiar with the Certification Program and the requirements for certification, and SHOULD review this document (the policy document), the requirements list [DEVREQS], the legal agreements that are part of the program, and other related information. All information and documents related to the NFC Forum Certification Program are available on or linked from the Certification Program website.

The Supplier prepares the Implementation Conformance Statement (ICS) for the product using the ICS Proforma available from the Certification Program website and chooses one or more Authorized Test Laboratories to perform the necessary Certification Testing for the product.

The Supplier chooses which aspects of the required Certification Testing will be performed in-house (first party) or outsourced to an Authorized Third Party Test Laboratory (see Section 11).

In consultation with the chosen test laboratory or laboratories, the Supplier develops a Test Plan for the product. The development of the Test Plan takes into consideration the Supplier's quality management data, to identify which aspects of the product have changed compared to any previously certified versions of the product (see Section 9). The Test Plan development also takes into account whether any test results MAY be inherited from previously certified NFC Forum Implementations that are incorporated in the product (see Section 9 and Section 10).

The Supplier is responsible for ensuring that the ICS and Test Plan for the product are complete and correct.

3.2 Certification Testing

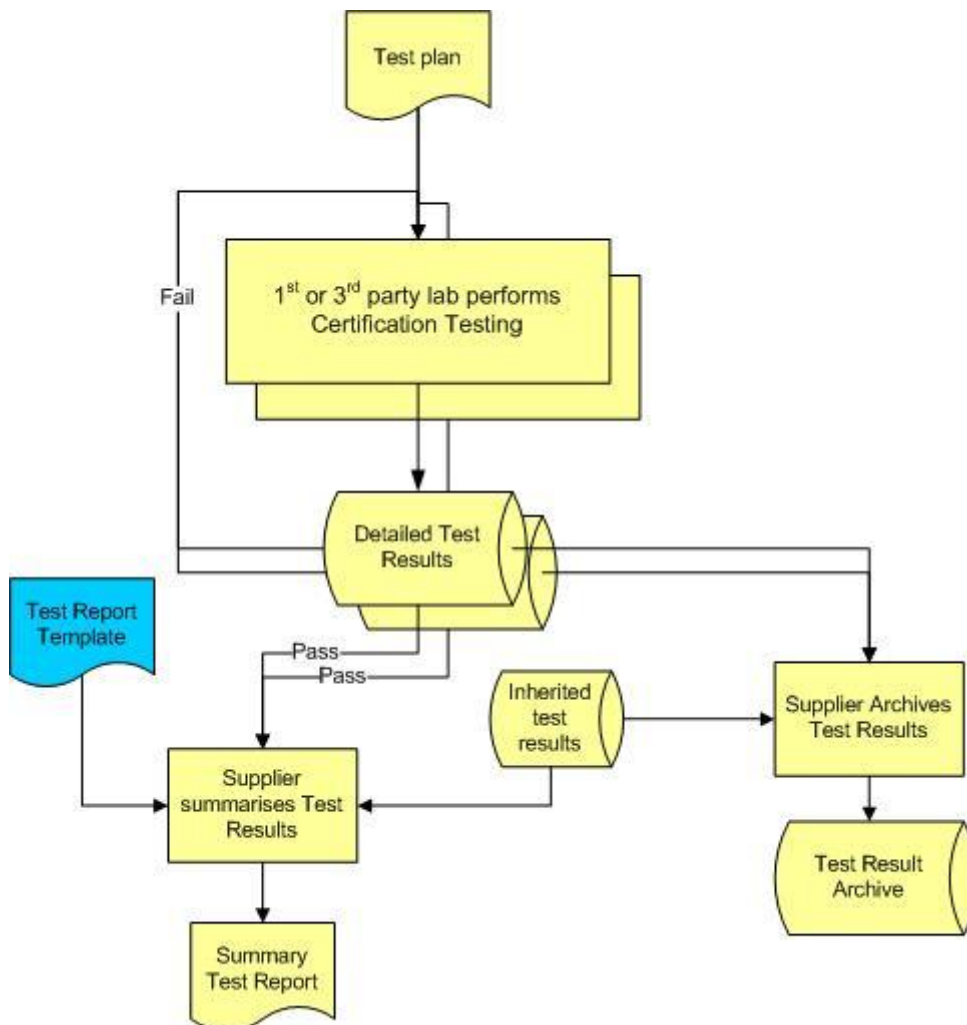


Figure 2: Certification Process: Certification Testing

Formal testing of the product then takes place according to the Test Plan. Different aspects of the product, e.g., analog and protocol, MAY be tested in parallel at different test labs using copies of the product.

The Supplier **MUST** store all detailed test results used to substantiate applications for certification for a period of no fewer than 7 years.

Using the NFC Forum Summary Test Report Template from the Certification Program website, the test labs produce Summary Test Reports that the Supplier assembles, along with any inherited test reports, into a complete Summary Test Report for submission to the Certification Administrator. At the time it is prepared, the scope of the complete Summary Test Report **MUST** match the scope of the functionality claimed in the product’s ICS for which the NFC Forum requires Certification Testing.

In the event that any test fails due to an agreed Interpretation, Waiver, or Test Case Deficiency, the Supplier MUST provide the correct reference to an approved Interpretation, Waiver, or Test Case Deficiency in the Summary Test Report.

3.3 Reporting and Acceptance

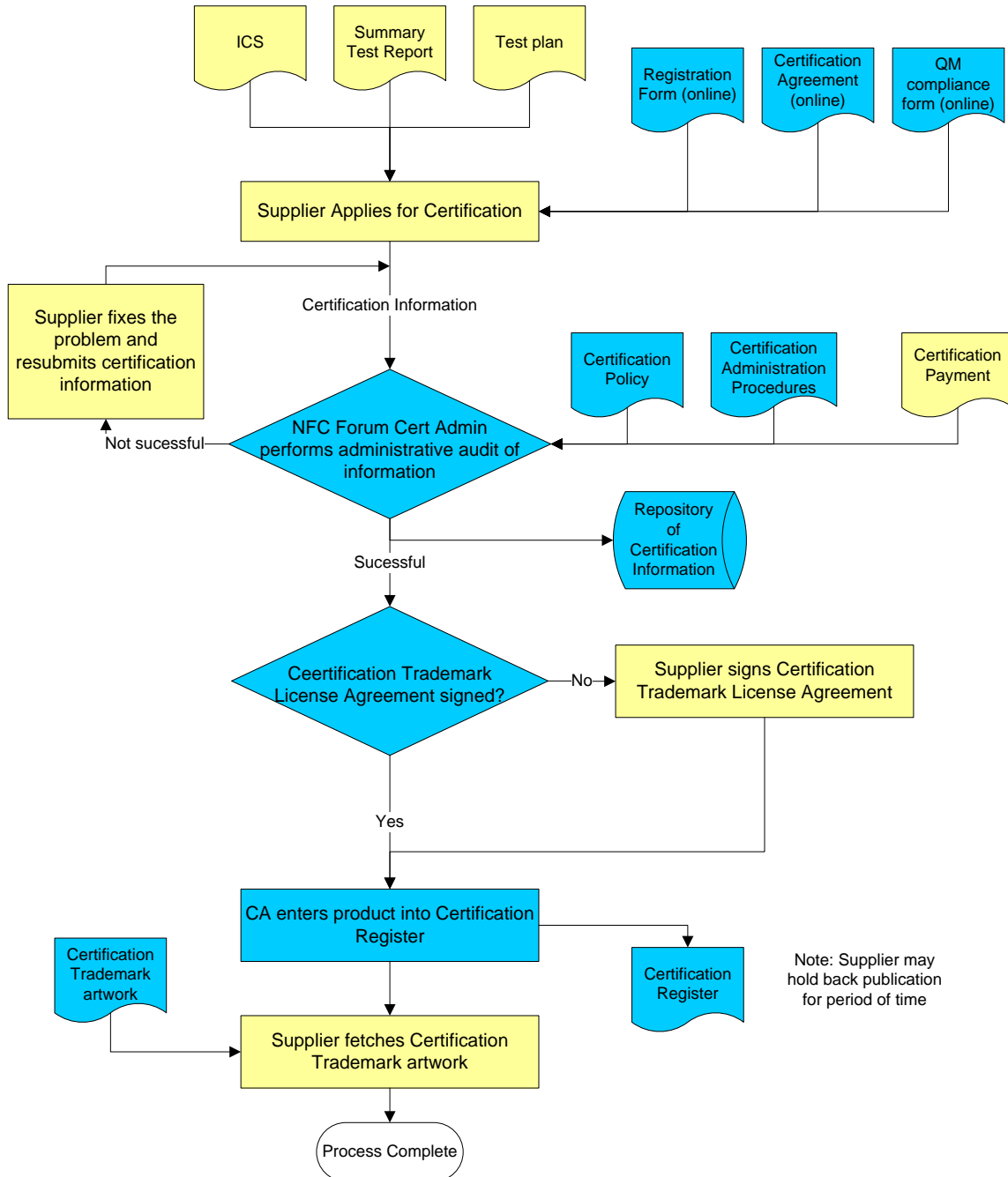


Figure 3: Certification Process: Reporting and Acceptance

Before applying to certify products, the Supplier **MUST** first register the organization's contact information with the Certification Administrator. This needs to be done only once per Supplier, after which multiple products **MAY** be certified. Large organizations with more than one business unit producing products for certification **MAY** wish to register the separate business units with the Certification Administrator.

To apply to certify a product, the Supplier **MUST** accept the online Certification Agreement and submit the required information about the product to be certified, including the ICS, Summary Test Report, and Test Plan.

Acceptance of the Certification Agreement includes the commitment by the Supplier to pay the certification fees. Fees are payable at this point, either in advance by credit card or on terms agreed upon with the Certification Administrator.

The Certification Administrator will check to ensure that the submitted certification information, including the registration information, ICS, Test Plan, and test results, demonstrates that the product passed the formal testing process and meets the Applicable Certification Requirements. The Certification Administrator will perform the audit of all certification-related information within 10 calendar days of receiving a complete submission.

If the Supplier has not already signed the NFC Forum Certification Mark License Agreement (CMLA) covering the use of the NFC Forum Certification Mark, the Supplier **MUST** do so before proceeding. The CMLA is an online agreement with a click-through license.

The product is now certified.

After the CMLA has been accepted and, provided that the Supplier has not requested that the certification remain confidential, the Certification Administrator will enter information about the Certified Implementation into the Certification Register on the Certification Program website, and the Supplier will then be able to download and print the Certificate.

If the Supplier has requested that certification remains confidential, then the fact of certification and the Certification Information will be kept confidential to the Certification Administrator and the Supplier, according to Section 15.3.

4 Certification

It is the Supplier’s responsibility to ensure that at all times each of its Certified Implementations meets the Applicable Certification Requirements and continues to pass the tests that were in force at the time of certification, independent of any changes made to the Certified Implementation.

4.1 Certification Release

The NFC Forum MAY publish new versions of its Specifications and will collate them into consistent sets to aid product procurement and development. Each such set is called a Certification Release and will be available on the Certification Program website.

A new Certification Release maps to a version of [DEVREQS], but a new version of [DEVREQS] does not necessarily result in a new Certification Release. After [DEVREQS] is published, the following additional activities SHALL be completed prior to announcing a new Certification Release:

- A Test Release (see Section **Error! Reference source not found.**) containing relevant published NFC Forum Test Specifications
- NFC device samples supporting [DEVREQS] available to the NFC Forum for use in validating test tools to be used in the Test Release.

Appropriate testing supporting the identified [DEVREQS] as follows:

- Testing type identified (whether this be a test tool or a testbed)
- Complete feature support
- Tools validated based on a validation target identified by the NFC Forum
- Validation status reflected in the TCCL by shifting tests for the new [DEVREQS] from “C” to “V” (see Section 8.3.1)
- Approved tools made available to NFC Forum Test Laboratories and a Test Laboratory readiness target identified by the NFC Forum is reached (e.g., three labs ready and capable of testing).

Certification Releases SHALL document and identify:

- The applicable version of the NFC Forum Device Requirements ([DEVREQS])
- The Test Release(s) that makes testing for [DEVREQS] features available (all subsequent Test Releases SHALL support testing for this [DEVREQS]). Therefore any subsequent Test Release made available by the NFC Forum under the same Certification Release can be used for the particular Certification Release.

The NFC Forum, at its sole discretion, will decide when to publish a new version of [DEVREQS], but this would typically be caused by an extension to the NFC Forum Functionality.

During the lifetime of certification to a particular Certification Release, the Specifications it contains MAY be subject to errata and interpretations. Test specifications will typically continue to be extended and updated during the lifetime of a Certification Release and will be made available in a new Test Release(s), as necessary.

Suppliers SHALL only certify products using Active Certification Releases. The list of “Active Releases” is available on the Certification Program website.

After a previous Certification Release’s grace period ends, this Certification Release will be removed from the list of “Active Releases” on the Certification Program website and placed in the “Expired Releases” list.

When a new Certification Release is published, the NFC Forum SHALL provide a grace period of up to 18 calendar months on the previous Certification Release. During this grace period, a supplier seeking certification has the option to certify against a previous Certification Release as long as it is on the list of “Active Releases” on the Certification Program website.

During the grace period, if the supplier is unable to add newly required features to a product as part of a new Certification Release, the supplier SHOULD apply for product certification under a previously active Certification Release and SHOULD support the [DEVREQS] associated with that Certification Release.

If the supplier claims support for the new features included in the new Certification Release, the supplier SHALL apply for product certification under the new Certification Release and SHALL support the [DEVREQS] associated with that Certification Release.

After the grace period ends, the expired Certification Release will become invalid and a supplier MUST apply for product certification under an Active Certification Release that supports the [DEVREQS] associated with the Active Certification Release.

If a Certification Release expires, products certified to the expired Certification Release MAY be updated and maintained and remain certified according to this policy, but new certifications on an expired Certification Release are not allowed.

4.2 Applicable Certification Requirements

The Applicable Certification Requirements for a particular product or Certified Implementation are the combination of the following items in force or active at the time of submission of the Certification Information to the Certification Administrator:

- The functionality REQUIRED and allowed by [DEVREQS] and claimed in the ICS for the Certification Release
- The applicable NFC Forum Specifications in the Certification Release, including errata REQUIRED by the NFC Forum
- The tests for this claimed functionality.

The Applicable Certification Requirements exclude tests that become REQUIRED for certification after the time of submission of Certification Information to the Certification Administrator.

4.3 Modification of the Specifications within a Certification Release

The NFC Forum MAY make changes to the Specifications it includes in a Certification Release during its lifetime, e.g., to address errors or ambiguities.

Such changes MAY give rise to updates to Test Specifications. (See Section 8.4.)

There will be no impact on existing Certified Implementations.

4.4 ICS (Implementation Conformance Statement)

An ICS (Implementation Conformance Statement) is the Supplier's documented set of claims describing precisely the way in which the product meets the [DEVREQS], including which modes and which optional features are supported.

An ICS is produced by completing the relevant ICS Template, available from <http://nfc-forum.org>; look for a link to the Certification Program.

The ICS of a Certified Implementation provides a precise identification of the Certified Implementation for which conformance is claimed by the Supplier. It also includes details of the specific configuration used to validate conformance, so that test results can be reproduced.

The ICS is used by Authorized Test Laboratories to select and parameterize appropriate test cases and acts as an indicator of basic protocol interoperability between different products.

The ICS is completed by the Supplier and submitted to the Certification Administrator as part of the registration process for certification. The Supplier shall ensure that the information supplied in the ICS is correct and complete and accurately reflects the implementation to be certified.

The Certification Administrator will not make the ICS for a Certified Implementation publicly available, but the Supplier is REQUIRED to make the ICS available to prospective corporate purchasers on request.

New versions of the ICS Template may be published by the NFC Forum at any time. Suppliers SHOULD use the latest version, but a grace period is allowed with the same duration as for updates to NFC Forum Test Specifications. See Section 8.1.

4.5 NFC Forum Certification of Components

This version of the Certification Policy does not include certification of NFC Forum Components.

In their applications for certification, Suppliers of Certified Implementations are allowed to list the names and version numbers of constituent products that implement part of the NFC Forum functionality. Such constituent product names and version numbers will appear on the Certificate.

The supplier of such an included product is allowed, subject to the agreement of the Supplier of the Certified Implementation, to state publicly that "This component has been used in an NFC Forum Certified Implementation (e.g., NFC Cert. Nr. xxxxx)".

4.6 Test Track Creation

A Test Track is a suite of tests. A Test Track MAY require conformance and/or interoperability testing. Members can use the "New Test Work Item Request Form" to propose a new testing track for interoperability and/or conformance testing.

Members SHOULD submit a New Test Work Item Request Form to the NFC Forum, who will determine its validity and completeness. The New Test Work Item Request Form MAY be returned, if it is improperly filled out, and/or the NFC Forum MAY provide additional guidance to the submitters (including corrections and updates) before submission for final approval.

A minimum of three member companies (Associate, Principal or Sponsor) in good standing is REQUIRED in order to submit a New Test Work Item Request.

Industry partners can request the addition of a New Test Work Item via the liaison channels.

The NFC Forum, at its sole discretion, reserves the right to accept or refuse applications for new Test Tracks.

5 Obligations of Suppliers of Certified Implementations

5.1 Achieving Certification

5.1.1 Certification Conditions

Certification is awarded to those implementations that have successfully completed the certification process by meeting the Applicable Certification Requirements and all other requirements for certification. Certification is effective once the Certification Administrator provides written notice to the Supplier that certification has been achieved. Such an implementation is then considered a Certified Implementation.

Claims of certification MAY only be made in relation to Certified Implementations. Claims of certification MAY not be made about implementations that have not completed the certification process or that have been withdrawn from the Certification Program.

As a condition of certification, the Certification Agreement requires the Supplier to:

- **Agree to the policies expressed in this document**
- **Warrant and represent that the manufactured units of the Certified Implementation continue to meet the Applicable Certification Requirements, as stated in the ICS**
- **Warrant and represent that the manufactured units would pass Certification Testing as it was defined when the implementation was certified.**

A buyer therefore can be confident that a Certified Implementation conforms to the specifications and will continue to do so.

5.1.2 Quality Management System (QMS)

To achieve certification, Suppliers MUST have a general quality management system in place that meets the following requirements.

1. The Supplier's manufacturing process (including change management) is controlled by a QMS that either complies with ISO9001, or equivalent recognized standard, or at least provides:
 - A set of procedures that cover all key processes in the manufacturing process
 - Proof of the monitoring of manufacturing processes to ensure they are producing quality products
 - Retention and maintenance of proper records relating to the manufacturing process
 - A clear system to check outgoing products for defects, with appropriate corrective action where necessary
 - Regular review of the individual processes and the quality system itself for effectiveness
 - Facilitation of continual improvement processes and procedures.
2. The Supplier's QMS ensures that any instance of a Certified Implementation that is shipped to market meets the Applicable Certification Requirements.

As a condition of certification, Suppliers of Certified Implementations are REQUIRED to “warrant and represent” that the conditions in requirements (1) and (2) above are met and will continue to be met throughout the manufacturing life of the product, for so long as the product remains a Certified Implementation.

The assertion is captured with a check box in the web-based certification system and is an explicit term in both the Certification Agreement and Certification Mark License Agreement.

5.2 Maintaining Certification

5.2.1 Certification Conformance

Each Certified Implementation is only REQUIRED to pass Certification Testing as it was defined at the time of the implementation’s certification.

The Certification Administrator has the right to audit the Supplier’s claims of conformance and adherence to the requirements of this policy. The Certification Administrator MAY at any time request Suppliers of Certified Implementations to provide the Certification Administrator with any information reasonably related to their Certified Implementations’ conformance with the Applicable Certification Requirements. If the Supplier fails to provide such information within 60 calendar days of the request, then the Certification Administrator MAY remove the product from the Certification Register, in which case the product ceases to be a Certified Implementation and the Supplier is no longer allowed to make claims of certification related to the product.

Third parties, including buyers and prospective buyers of a Certified Implementation, that have evidence of non-conformance in the Certified Implementation SHOULD report such non-conformance to the Supplier of the Certified Implementation. If the Supplier does not address the non-conformance within 60 calendar days, the issue MAY be raised to the Certification Administrator. Recourse shall always be made through normal support channels before escalation to the Certification Administrator.

If a Certified Implementation is found by any means to no longer meet the Applicable Certification Requirements, the Certification Administrator shall provide written notification to the Supplier of that Certified Implementation. The Supplier MUST complete at least one of the following options:

- Within 180 calendar days, rectify the non-conformance (subsequent production) and satisfy the Certification Administrator and/or the notifier of the efficacy of the rectification
- Within 180 calendar days, satisfy the Certification Administrator and/or the notifier that the Certified Implementation is conformant
- Within 180 calendar days, cease making any claim of certification in relation to the Certified Implementation, in which case the product ceases to be a Certified Implementation
- Within 90 calendar days, invoke the appeals process described in Section 12. The Supplier will have 90 calendar days from the completion of the appeals process to implement the decision by the NFC Forum.

If the Supplier fails to take at least one of the above actions within the timescales described above, the product ceases to be a Certified Implementation.

5.2.2 Use of a Certified Implementation in Secondary Products

A Certified Implementation MAY be integrated into secondary products. For example, a certified reader/writer implementation MAY be integrated into a vending machine or a laptop computer.

The Supplier of a Certified Implementation that MAY be used in this way shall provide its customers with guidance to enable them to maintain conformant behavior of the integrated Certified Implementation.

5.3 Removal of Certification

A product shall cease to be a Certified Implementation if any of the following occur:

- The product ceases to meet the Applicable Certification Requirements. See Section 5.2.
- The Supplier requests that the Certification Administrator withdraw the Supplier's product from the Certification Register.
- The Supplier fails to adhere to any of the policies defined within this Certification Policy document.

If a Certified Implementation ceases to be certified, the Supplier MAY no longer make any claim of certification in relation to that product. The Supplier, at the Supplier's own expense, shall remove any existing claim of certification from all subsequent production of that product and from all related sales or promotional literature and other materials. The Certification Administrator MAY inspect any such product, literature, or other materials to ensure adequate removal.

Once a product ceases to be a Certified Implementation, any future claim of certification in relation to that product will require re-certification in advance of such claims being made.

The right to use the NFC Forum Certification Mark in conjunction with a product shall be terminated as soon as the product ceases to be a Certified Implementation.

6 The NFC Forum Certification Mark

Once the Certification Administrator has notified a Supplier that certification has been achieved, the Supplier MAY use the NFC Forum Certification Mark in association with that Certified Implementation, as per the terms specified in the Certification Mark License Agreement.

The NFC Forum Certification Mark MAY only be used on or in relation to Certified Implementations.

Award of the NFC Forum Certification Mark is not an endorsement by the NFC Forum of any product.

6.1 Licensing the Certification Mark

In order to use the NFC Forum Certification Mark, the Supplier MUST sign a Certification Mark License Agreement. This license agreement is the legal contract governing how the NFC Forum Certification Mark MAY be used and defines the rights and obligations of the Supplier.

6.2 Use of the Certification Mark

The terms for use of the NFC Forum Certification Mark in relation to a Certified Implementation are as described in the Certification Mark License Agreement.

6.3 Use of the Certification Mark on Secondary Products

Certified Implementations MAY be integrated into other products before distribution to market. Inclusion of a Certified Implementation within another such secondary product does not give the supplier of that secondary product any rights to use the NFC Forum Certification Mark.

Any use of the Certification Mark on or in relation to the secondary product first requires the secondary product to be certified and listed in the Certification Register.

If the NFC Forum Certification Mark has been applied to a Certified Implementation, it MAY remain in place after the Certified Implementation is integrated into the secondary product; there is no requirement for the Certification Mark on the Certified Implementation to be removed or obscured, and it is allowed to be visible to the public after integration.

6.4 Removal of the Certification Mark

If a Certified Implementation ceases to be certified, any and all rights the Supplier has to use the NFC Forum Certification Mark on or in relation to that product cease immediately.

The terms for removal of the NFC Forum Certification Mark in relation to a product are as described in the Certification Mark License Agreement.

Failure to adhere to these provisions will be a breach of the Certification Mark License Agreement and shall result in its termination.

7 Certification Register

7.1 Listing in the Register

The Certification Register is a web-based record of all Certified Implementations and is maintained by the Certification Administrator. The register contains all of the following public information:

- Manufacturer
- Model
- Version number (OPTIONAL)
- Date of Listing of Certification
- Certification Release
- Device Class
- Test Release
- Test Case Control Category List (TCCL) Version
- Unique ID (produced by the Certification Administrator (CA))
- Supplier Contact Information (email, generic support email, or web address)
- Flag indicating that testing was performed in an ISO 17025 accredited test lab (see [ISO/IEC_17025]).

Once certification has been awarded, the Certification Administrator will enter the Certification Information into the Certification Register. A registration that is being held confidential, as provided for in Section 15.3, will not be entered into the Certification Register during the confidential period.

7.2 Removal from the Register

Only Certified Implementations are included in the Certification Register. If a product ceases to be certified, the Certification Administrator will remove it from the Certification Register.

8 Testing for Certification

The objective of the NFC Forum Certification Program is to encourage and facilitate the development and market availability of products that meet the NFC Forum Specification(s). Test specifications and test tools have two essential roles in this context: they help developers and quality assurance teams to ensure that a product meets the specification(s), and they are used to ensure that only eligible products are certified.

8.1 Testing Documentation: Test Releases and Test Specifications

The NFC Forum is responsible for developing and publishing all Test Specifications used in the NFC Forum Certification Program and will collate the specifications into consistent sets to aid product certification and testing. Each such set is called a “Test Release”.

The NFC Forum Test Specifications provide test coverage for the Technical Specifications and MAY also cover Specifications and Standards published by other organizations. They MAY also include Test Specifications from other organizations by reference.

The NFC Forum is responsible for providing timely updates to its Test Specifications and will publish new Test Releases on a regular basis. Test Releases will contain new documents and/or updates to existing documents, including:

- ICS(s)
- IXIT(s)
- Test Plans
- Test Report Template(s)
- Test Cases
- Test Case Mapping Table(s).

The Test Specifications that MUST be used in order to perform Certification Testing are under continual development and extension by the NFC Forum. The Test Specifications that are currently valid for Certification Testing to a Certification Release are identified by a Test Release listed on the Certification Program website.

8.2 Test Tool and Testbed Processes

8.2.1 Test Tools

Certification Testing MUST use test tools that have been validated by the NFC Forum. A list of validated test tools is available on the Certification Program website; this list provides for each test tool: the name of the test tool supplier, the type of test tool (e.g., digital protocol, analog, etc.), the test tool name, and the applicable Certification Release.

8.2.2 Testbeds

Testbeds are selected by the NFC Forum for certain interoperability scenarios or programs. A list of the devices comprising a testbed is available on the Certification Program website; this list provides the name of each device manufacturer, the testbed role of each device (e.g. NFC Forum Listener, Poller, etc.), the device name, and the applicable Certification Release.

8.3 Testing of the Product

A product that is to be tested for certification will include implementations of one or more NFC Forum Specifications. For testing purposes the product MAY be considered to consist of at least one IUT (Implementation Under Test). However, if multiple Test Specifications apply, then the product is considered to consist of multiple IUTs, one for each of the applicable NFC Forum Test Specifications. Each IUT within the product will give rise to a separate section of the Test Plan and a separate detailed test report. If an IUT requires additional hardware (in the case of a dongle, module, or other “dependent solution”) the Supplier will provide all required hardware and software to the test laboratory for certification testing purposes.

In the documentation to the consumer, the Supplier is REQUIRED to specify which conditions the device MUST fulfill in order to provide NFC Forum functionality. Each Supplier is responsible for verifying that all test cases implied by the ICS are included in each IUT Test Plan for which they are responsible. This includes all mandatory and conditionally-mandatory test cases for the features supported by the product. Within each IUT Test Plan, functionality MAY be grouped by calling out NFC Forum-defined Test Groups. These Test Groups will be listed in the Test Case Categories List (TCCL).

Prior to submission to the CA, the IUT Test Reports MUST be summarized and combined into a Summary Test Report. The Summary Test Report shall be based on the NFC Forum Summary Test Report Template available on the Certification Program website.

The Supplier is responsible for ensuring the correctness and completeness of: the overall Test Plan for the product, each of the IUT Test Plans, and the Summary Test Report.

8.3.1 (TCCL) Test Case Categories List

The Test Case Categories List (TCCL) is a document that lists all NFC Forum Test Cases and the associated test category of each Test Case. The TCCL serves as a reference document that can be updated at short notice without any update to the NFC Forum Test Specifications.

NFC Forum test cases fall under one of six categories:

A – Applicable	Test case that MUST be run for Certification if a relevant feature is present
V – Validated	Test case that has been validated, but that is subject to a grace period before being promoted to Category A
C – Candidate:	Test case approved for validation
D – Demoted	Test case demoted from Category A, V, C, or P
P – Partially Demoted	Test case that MUST be run for Certification if a relevant feature is present, but in which one or more sub-cases has been demoted
I - Informational	Test case that does not need to be run for Certification

A Category A test case MUST be executed for Certification when a relevant feature is present. A Category V test case MAY have an applicable date when it will be promoted to Category A. The NFC Forum MAY add new test cases to Category C no more than once per 180 day period, as illustrated in Figure 4.

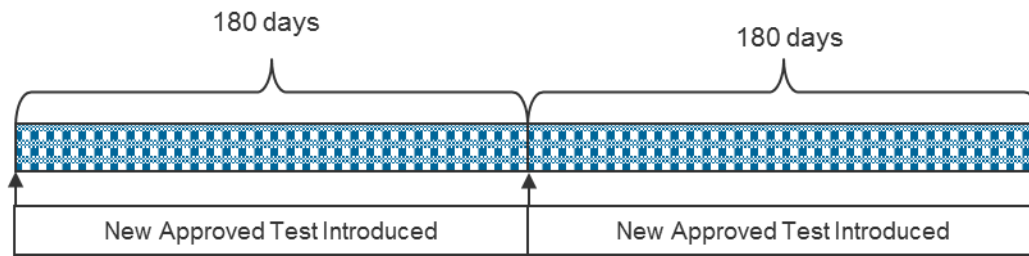


Figure 4: Controlled Introduction of New Test Cases

A Category C test case MAY be upgraded to Category V after full validation. A Category V test case can be promoted to Category A after a grace period of no fewer than 120 calendar days.

For a test case entered into the TCCL, Figure 5 shows its lifecycle, its applicability date, and its minimum lifetime under normal circumstances before replacement or the test becomes obsolete.

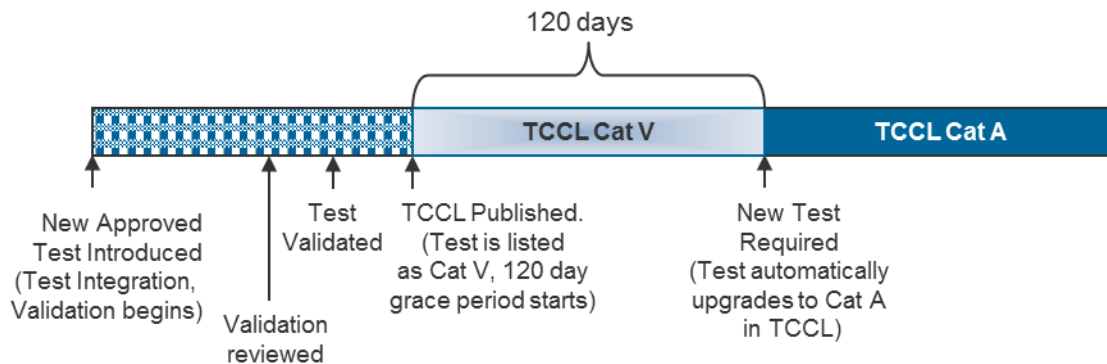


Figure 5: Test Case Introduction Timeline

The NFC Forum MAY decide to downgrade test cases at any time and without notice and make appropriate changes to the TCCL within 4 calendar days.

Detailed information regarding the TCCL process is contained in [MAINTPROC], which is available to all NFC Forum members.

8.3.2 Test Results

Test results will be provided in a report that meets the requirements defined by the NFC Forum, following the principles of [ISO/IEC_17025]. If a test case cannot be run according to the defined test procedure, a Problem Report (PR) SHOULD be submitted for NCIRP consideration.

8.3.3 Test Case Deficiencies

Published test cases become active once they are incorporated into the TCCL and released into the testing process. In the event that an error in a test case is detected by a vendor, an implementer, or a Test Laboratory, then a Problem Report (that includes the proposed modification to solve the error) MUST be completed and submitted to the NCIRP (see Section 13).

The Problem Report will be evaluated by the NCIRP and MAY be accepted or rejected. A test case MAY be downgraded to TCCL Category D as a result of the evaluation. If the Problem Report is approved as a Test Case Deficiency (TCD), it is given a unique identifier and it is entered into the TCCL, so that all testing from that point on is performed according to the modified test case as per the approved TCD and Test Specification Changes.

8.4 Test Specification Changes

Test Specifications are derived from the Specifications and are subsidiary to them. When a Specification changes, a Test Specification that refers to it will usually need to change, but when a Test Specification changes, the Specifications are not affected.

During the life of a Certification Release, the NFC Forum MAY publish several versions of the Test Specifications.

Suppliers shall always use the latest Test Specifications when certifying new products. However, a grace period of up to 18 calendar months will be provided before a Test Specification is phased out (see Figure 6).

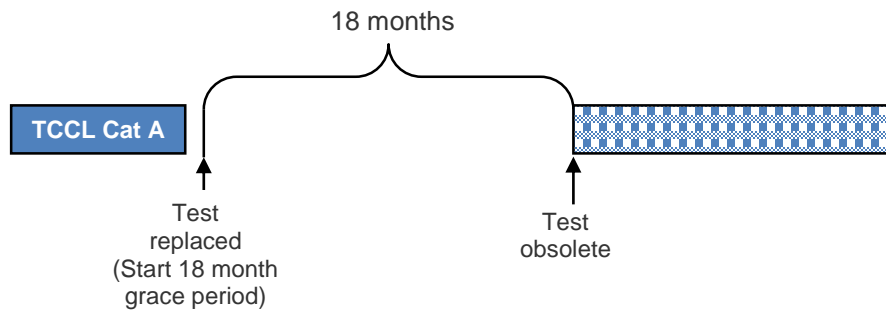


Figure 6: Test Case Replacement Timeline

Derivative and re-branded products MAY continue to use the version of the Test Specification that applied to the certification of the Certified Implementation from which they are derived. If a Supplier changes a previously Certified Implementation in a way that requires re-testing, *it MAY be re-tested using the same or a subsequent version of the NFC Forum Test Specification.*

Products already certified and their derivatives are not affected by subsequent changes to Test Specifications and re-testing is NOT REQUIRED when a new version of a Test Specification is released.

9 Changes to a Certified Implementation

Any change to a Certified Implementation shall be assessed by the Supplier, who shall produce a documented evaluation of the impact of the change upon the implementation's NFC Forum Functionality.

If the Supplier considers that a change to the Certified Implementation has a significant risk of causing a change in the conformance of the implementation or of changing the results of any tests, then the Supplier SHALL re-test the implementation to ensure continued compliance with the requirements of the Certification Program. Records of all such testing MUST be kept by the Supplier in a Compliance Folder, along with the documented impact evaluation reports, and MUST be made available to the Certification Administrator on request.

The initial certification package SHALL be stored in the Compliance Folder as the baseline for the lifetime of the product.

The Compliance Folder shall contain (at least):

- Product name and model number
- Device Class
- Date of Test
- Record of any change to software / hardware and supplier plan for insuring compliance after change is in effect
- NFC Forum Device Requirements version
- TCCL Version and Certification Release
- Completed ICS and IXIT based on original certification
- Applicable waivers
- Hardware revision and change history
- Software revision and change history
- OS revision (where applicable)
- Test Pass / Fail results
- Rationale for not recertifying (low risk, minor change, etc.)
- Results of supplier plan demonstrating compliance after change in effect; supplier's management signs a statement that recertification is NOT REQUIRED.

To continue to be considered a Certified Implementation, it MUST be clear that a maintenance release or other update is included within the scope of the product name and version listed on the Certification Register. The version number listed MAY include a broad description, such as "version 3.2.x" or "version 3.2 and higher".

The Supplier MAY also choose to carry out full Certification Testing and certification for maintenance releases and other updates. But such is NOT REQUIRED unless the update is outside the scope of the information on the Certification Register.

10 Certifying a Product Based on a Previous Certification

10.1 General Policy

Many Certified Implementations will be distributed to end customers under different names or rebranded by OEMs, with or without changes. Many will be incorporated into other products.

For example:

- A Certified Implementation is to be sold in a new territory under a new name (see Section 10.2 on product renaming).
- A mobile handset is re-branded by a network operator (see Section 10.3).
- A certified reader/writer implementation is incorporated into a vending machine or a laptop computer, or new features update a certified product (see Section 10.4 on products integrating certified devices).

If the NFC Forum Certification Mark is to be used in relation to such a product, or if such a product is to be listed in the Certification Register, then the product **MUST** be certified in its own right.

The general principle in these cases is that Certification Testing is **NOT REQUIRED** to be repeated, but certification **MAY** still be obtained by inheriting the test results from the certification of the parent Certified Implementation.

The complete NFC Forum Certification Policy applies to re-branded products, including, without limitation, re-branding, maintenance updates, and derivatives.

10.2 Renaming a Product

If a Supplier wants a Certified Implementation to be listed again in the Certification Register, but under a new name, then, if there is no difference other than the name, an additional listing **MAY** be created at the request of the Supplier and upon payment of the listing fee.

The Certification Register will maintain the information that there is this special relationship between the initial Certified Implementation and the additional (subsidiary) listings.

If the initial Certified Implementation ceases to be certified for any reason, then at the same time all subsidiary listing(s) will also cease to be certified.

All such subsidiary listings **MUST** share the same ICS, apart from the product name.

10.3 Re-branding a Certified Implementation

The organization that submits the application to certify the re-branded product is responsible for the product meeting the Certification Requirements.

To certify a re-branded product, the Supplier **MUST** submit an application for certification that identifies the original Certified Implementation that is being re-branded.

As part of the application for certification, the Supplier will submit a Re-brand Acknowledgement Form, signed by the Supplier of the original Certified Implementation, which confirms both:

- That the re-branded product contains no changes to the Certified Implementation that have a significant risk of changing or materially affecting the compliance of the Certified Implementation to the Applicable Certification Requirements
- That the original test results apply to the re-branded product.

The certification of the re-branded product will then reference the test results supplied with the original certification.

All such re-branded products **MUST** share the same ICS, apart from their product and organization names.

10.4 Integrating a Certified Implementation into a New Product

A Supplier **MAY** wish to certify a new product that integrates a certified implementation. Information on which Test Groups can be inherited within a certification release is available in the TCCL. Inheritance of test results is allowed at a Test Group level.

To certify a product containing IUT functionality unchanged and isolated by a Test Group*, the Supplier **MUST** submit an application for certification that identifies the original Certified Implementation that has been embedded/incorporated or integrated within it. The Supplier is **REQUIRED** to do one of the following depending on the risk of compliance being impacted in the new product to be certified:

- The New Product is to be certified under the same Certification Release as the Original Certified Implementation (requires Certification Release is still active at time of submission):
 - No changes to functionality in Test Groups: Submit a full application for certification including a Test Plan referencing the Test Groups to be inherited from the original certified implementation and new test results for the functionality that cannot be inherited.
 - Addition of an optional feature: Submit a full application for certification including a Test Plan referencing the Test Groups to be inherited from the original certified implementation, new test results for the functionality that cannot be inherited, and new test results for the added feature(s).
- The New Product is to be certified under a newer active Certification Release than the Original Product:
 - Submit a full application for certification including a Test Plan referencing the Test Groups to be inherited from the original certified implementation, new test results for the functionality that cannot be inherited, and new test results for any added feature(s) that are **REQUIRED** as part of the new Certification Release.

*Not all Test Groups allow inheritance from one product to another where embedding/incorporating or integrating the original certified implementation into a new product **MAY** impact the implementation as defined by the NFC Forum. For Test Groups where inheritance is not allowed, new test results **MUST** be submitted with the new product to be certified.

10.5 Administrative Changes

The Supplier is responsible at all times for the accuracy of the information held on the Certification Register in connection with the Supplier's Certified Implementations. The Certification Program website provides facilities to allow the Supplier's staff (who previously have been identified to the Certification Administrator) to update over the Internet the information about a Certified Implementation.

For other administrative changes, such as those to the designated certification contacts, the Supplier MAY carry out such changes on the Certification Program website at any time.

11 Test Laboratories

The following NFC Forum authorized laboratories are allowed to perform testing for NFC Forum certification:

- First Party (owned and controlled by the Supplier) or Third Party (owned and controlled by another party) Laboratories accredited to [ISO/IEC_17025].
- First Party (owned and controlled by the Supplier) Laboratories that follow the principles of [ISO/IEC_17025] but are not accredited.

When Certification Testing is performed at a First Party laboratory without [ISO/IEC_17025] accreditation, the Supplier **MUST** in each application for certification claim that the Certification Testing followed the principles of [ISO/IEC_17025]. If all Certification Testing for a product is carried out in an [ISO/IEC_17025] Accredited Test Laboratory, the certification listing information will contain the note "Tested in ISO 17025 Accredited Test Laboratory"; otherwise, the certification listing information will not contain any note about [ISO/IEC_17025].

Detailed requirements for NFC Forum Test Laboratories, and other relevant information, are contained in [LABREQS], which is available to all NFC Forum members.

12 Archiving and De-listing Certifications

All Certified Implementations are considered active by the NFC Forum unless either the Supplier directs otherwise or the Certification is removed (as described in Section 5.3).

Active Certified Implementations are listed on the Certification Program website.

12.1 Archiving Certifications

For the purposes of information management, product listings MAY be periodically archived on the Certification Program website. Archived Certified Implementations are listed on a separate page. Products that are archived remain certified. They MAY be un-archived, in which case they will again be listed with other active Certified Implementations.

12.2 De-listing Certifications

A Certified Implementation MAY be de-listed by the Supplier at any time. A mechanism for the de-listing of Certified Implementations will be made available by the Certification Administrator.

The following will occur on an annual basis:

1. The CA sends an email to the Supplier with the URL to the de-listing administration page.
Note: The Supplier SHALL register and maintain an appropriate email contact.
2. On the de-listing administration page the Supplier can select the product for de-listing and click to de-list it.
3. Once the Supplier clicks the de-list button, the de-listing is complete, and a confirmation email will be sent to the Supplier.

13 Problem Reports (PR) and Issue Resolution

Any applicant for certification MAY disagree with the reported result of a test, or the NFC Forum Test Laboratory MAY report an issue for clarification about the Specifications, the Device Requirements [DEVREQS], the Test Specifications, or the certification process and policy. In such case a Problem Report (PR) is completed and submitted to the NFC Forum Certification Issue Resolution Panel (NCIRP). The NCIRP is responsible for bringing the issue to resolution.

Further information regarding the NCIRP process is contained in [NCIRPGDE], which is available to all NFC Forum members.

14 Appeals

Suppliers MAY appeal decisions made by the NFC Forum or the Certification Administrator. The occasions that MAY give rise to an appeal include, but are not limited to, the following:

- The Supplier disagrees with the resolution of a Problem Report.
- The Supplier disagrees with the Certification Administrator's grounds for denying the award of certification.
- The Supplier of a Certified Implementation disagrees with a formal notification for the need to rectify a non-conformance.

Appeal requests SHOULD be made to the Certification Administrator and MUST be accompanied by the appeal fee. The appeal fee is set by the NFC Forum and listed on the NFC Forum Certification Program website. Appeal requests are forwarded by the Certification Administrator to the NCIRP for attention.

Further information regarding the Appeals process is contained in [NCIRPGDE], which is available to all NFC Forum members.

15 Confidentiality

15.1 Confidentiality During Certification

All information relating to a Supplier and the product to be certified will be held confidential during the certification process (prior to the award of certification).

Test results will always be confidential. Information regarding the results of testing shall not be disclosed in any publicly available document or to any third party by the Certification Administrator, the Supplier, Test Laboratories, or any third-party acting on the Supplier’s behalf.

In addition, the Certification Administrator will always hold confidential any information regarding unsuccessful requests for certification.

15.2 Disclosure of Certification Information

Certification information consists of: the fact that certification was achieved, the description of the Certified Implementation (e.g., manufacturer and model), and the date of publication of the certification. Any claims of conformance or information related to the certification process **MAY** only be made public after the Certification Administrator has notified the Supplier in writing that the product has passed the certification process.

The Certification Administrator will make certification information publicly available by including it in the Certification Register available on the Certification Administrator’s website.

Table 1: Certification Information

Public Information	Non- Public Information
Manufacturer	S/W version
Model	H/W version
Version Number (OPTIONAL)	Date of Certification
Date of Listing of Certification	Summary Test Report
Certification Release	ICS
Test Release	Implementation Test Plan
Test Case Category List (TCCL) Version	
Unique ID (Produced by the CA)	
Supplier contact information (Email, Generic Support Email, or Web URL)	
Flag indicating if testing was performed in an ISO 17025 Accredited test lab	
Device Class	

15.3 Optional Confidential Treatment of Certification Information

On occasion a Supplier will apply for and achieve certification prior to the product's launch in the marketplace. To enable the Supplier to keep such information confidential prior to product launch, the Supplier MAY request that the certification information be kept confidential for a maximum period of 180 calendar days from the date of written notification by the Certification Administrator that the product has achieved certification.

During this period the Supplier MAY not publicly use the Certification Mark or make any public claim that the product is certified by the NFC Forum without first informing the Certification Administrator that the confidential period has expired. In the event that the Supplier wishes to keep the certification information for a product permanently confidential, the Supplier MAY request withdrawal and deletion of such information. Such product is then no longer considered to be a Certified Implementation.

The certification information will cease to be held confidential upon the earlier of two events: notice by the Supplier that the confidential period has expired, or the end of the 180-day period, provided that the Supplier has not requested withdrawal and deletion of such information.

A. Revision History

Table 2 outlines the revision history of NFC Forum Certification Policy.

Table 2: Revision History

Document Name	Revision and Release Date	Status	Change Notice	Supersedes
NFC Forum Certification Policy	Version 1.2, September 2010	Public version	Changes for public release	Version 1.1c
NFC Forum Certification Policy	Version 1.2 November 2010	Public version	Minor updates to References	Version 1.2, September 2010
NFC Forum Certification Policy	Version 1.2 July 2011	Public version	Modifications for consistency with implementation	Version 1.2 November 2010
NFC Forum Certification Policy	Version 1.3 June 2012	Public version	Various policy and editorial changes	Version 1.2 July 2011
NFC Forum Certification Policy	Version 1.4, May 9, 2014	Public version	Modifications to incorporate Certification and Test Releases	Version 1.3, June 2012
NFC Forum Certification Policy	Version 1.5, October 21, 2015	Public version	Includes changes for allowing Testing Tracks	Version 1.4, May 2014
NFC Forum Certification Policy	Version 1.5, June 16, 2016	Public version	Adds support for interoperability testing	Version 1.5, October 2015