LoRa Alliance, Inc. Certification Policies and Procedures

For Members

April 2020
INTRODUCTION
This document defines policies and procedures related to LoRaWAN Certification, the product certification and testing program implemented and maintained by the LoRa Alliance for Alliance members. This document includes descriptions of:

- The LoRaWAN Certification program
- Types of certification
- Testing programs and authorized test services providers

NOTICE OF USE AND DISCLOSURE
Copyright © LoRa Alliance, Inc. (2020). All Rights Reserved. The information within this document is the property of the LoRa Alliance (the Alliance).

Elements of LoRa Alliance specifications may be subject to third party intellectual property rights, including without limitation, patent, copyright or trademark rights (such a third party may or may not be a member of LoRa Alliance). The Alliance is not responsible and shall not be held responsible in any manner for identifying or failing to identify any or all such third party intellectual property rights.

This document and the information contained herein are provided on an AS IS basis and THE ALLIANCE DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO (A) ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OF THIRD PARTIES (INCLUDING WITHOUT LIMITATION ANY INTELLECTUAL PROPERTY RIGHTS INCLUDING PATENT, COPYRIGHT OR TRADEMARK RIGHTS) OR (B) ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NONINFRINGEMENT.

IN NO EVENT WILL THE ALLIANCE BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF BUSINESS, LOSS OF USE OF DATA, INTERRUPTION OF BUSINESS, OR FOR ANY OTHER DIRECT, INDIRECT, SPECIAL OR EXEMPLARY, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY KIND, IN CONTRACT OR IN TORT, IN CONNECTION WITH THIS DOCUMENT OR THE INFORMATION CONTAINED HEREIN, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH LOSS OR DAMAGE.

The above notice and this paragraph must be included on all copies of this document that are made.

LoRa Alliance, Inc.
5177 Brandin Court,
Fremont, CA 94538 USA

Note: All Company, brand and product names may be trademarks that are the sole property of their respective owners and used under license or by permission.
LoRaWAN CERTIFICATION PROGRAM

LoRaWAN Certification is the program which enables certification of products that conform to LoRa Alliance standards. The program defines various types of certifications and related policies including requirements for certification and testing programs and leverages the expertise of subject matter experts to ensure that only quality products earn LoRaWAN Certified™ product status.

LoRaWAN Certified generally follows international standards for the definition and operation of a certification program. In particular, LoRaWAN Certified is designed as a Type 1b certification program as defined in ISO/IEC Guide 17067: 2013. Type 1b systems consist of several types of activities:

- Determination of product characteristics: This is achieved through testing of submitted samples performed by independent authorized test service providers.
- Evaluation: This is achieved by formally evaluating the results of testing.
- Decision: This is the stage that controls granting, maintaining and extending suspending or withdrawing certification.
- Licensing: Licensing refers to granting, suspending, or withdrawing the rights to use certificates or marks such as logos.

Testing Versus Certification

The LoRaWAN Certification program maintains a strict distinction between testing and certification. Testing is the process verifying conformance to LoRa Alliance standards. Certification is granting official recognition that individual products conform to LoRa Alliance standards and that product manufacturers are conforming to all the relevant requirements and policies of the LoRaWAN Certification program. Only the LoRa Alliance may grant certification.

LoRa Alliance Certification Committee

The LoRa Alliance Certification Committee is responsible for development of policies related to certification and coordination with other technical working groups on certification related issues. The Certification Committee is chartered by the LoRa Alliance Board of Directors and is composed of representatives of member organizations of the Alliance serving on a volunteer basis.

LoRa Alliance Expert Review Panel

The Expert Review Panel is a panel that provides oversight technical advice to the LoRaWAN Certified Program. The Expert Review Panel is composed of representatives from LoRa Alliance member companies with requisite membership class appointed by the Certification Committee. The Expert Review Panel may also include representatives of LoRa Alliance Authorized Test House Service providers on a non-voting basis. The Expert Review Panel advises on validation of test service providers and may provide other technical advice on matters including review of test plans, review of interoperability concerns discovered in the field, review of non-compliant results submitted by test service providers, and support of the Certification Committee in resolution of disputes.
LoRa Alliance Certification Appeals Committee

The LoRa Alliance maintains a Certification Appeals Committee to address certification appeals. The Appeals Committee is composed of the CEO of the Alliance, the Director of Certification, and one or more selected representatives of authorized test house service providers that have not been involved in the certification in question. The Director of Certification of the Alliance acts as the chairperson of the Appeals Committee.

CERTIFICATION PROCEDURES

Conditions and Requirements for Certification

Eligibility Status
To be eligible to submit a product for certification or compliance testing and to be granted certification, a company must either be a member of the LoRa Alliance in good standing or a Certification Affiliate with a current Certification Affiliate Agreement with the Alliance. This version of the Certification Policies and Procedures only applies to members of the LoRa Alliance.

Submission of Application
Certification is granted to a product based on an application submitted to the Alliance by an Alliance member.

Payment of Testing and Certification Fees
There are two fees associated with the LoRaWAN Certification program: testing fees and certification fees. Testing fees are set by individual authorized test house service providers and retained by such test service providers. Certification fees are set by the LoRa Alliance and such fees may vary based on the type of membership in the Alliance and are in addition to ongoing membership dues. The current Alliance member certification fee schedule is available at http://www.lora-alliance.org or by contacting the Alliance at cert-test@lora-alliance.org.

Conformance to Standard
Certification is awarded based on a product’s conformance to a LoRa Alliance standard and the manufacturer’s compliance with other requirements. Conformance is verified by testing performed by an authorized test house service provider and demonstrated by a test report documenting successful completion of the entire test plan including all test cases for mandatory features and test cases for any optional features as required. The test service providers report any relevant information regarding the product’s conformance to a standard in the test report.

The Alliance may permit certification to a previous version of a standard following release of a new version of a standard. The Alliance may in its discretion impose time restrictions on certifying products to older versions of the specification.
Documentation of Product
The LoRa Alliance requires information sufficient to identify a product for the purpose of testing and before granting certification including:

- Declaration of Conformity
  - Version numbers of product hardware, software, and firmware
  - For end products, a Stock Keeping Unit (SKU) and/or Universal Product Code (UPC)
  - Signature of a representative of the product manufacturer
  - Signature of a representative of the authorized test service provider performing product testing
- Product description
- Product image

Certification Process
The certification process begins after the manufacturer completes development of the product to be certified.

1) Testing: As described in more detail in the section on Testing Procedures below, testing for conformance to LoRa standards is performed by Alliance authorized test service providers using test plans developed by the Alliance. Each test service provider has its own processes for product submission and will provide details on requirements for submission. All test service providers will require submission of a Declaration of Conformity for the submitted product. In order to successfully pass test plans, a product must pass all mandatory test cases and any optional test cases that are applicable to the product based on the functionality it supports. In addition to the explicit functionality being checked by the test cases, the submitted product must not exhibit any behavior which is contrary to the behavior detailed in the underlying specifications in order to be considered to have passed a test plan.

2) Reporting: Test service providers will submit test results to the Alliance member requesting testing. Members will submit the test reports through the method communicated by the Alliance.

3) Application: The Alliance grants certifications for Alliance members based on an application. The application is web based and is available in the Member’s Area of http://www.lora-alliance.org for members of the Alliance.
4) Processing: The Alliance Help Desk personnel process applications under the direction of the Alliance. Applications are processed for completeness to all requirements as described in Alliance policies including:

a. Submission of all required documentation
b. Current membership in the Alliance in good standing
c. Successful completion of testing
d. Payment of applicable fees

5) Certification: Only the LoRa Alliance may grant certification and a product is only certified when the Alliance issues certification.

Certificates
In the case of certification being granted, the LoRa Alliance provides a certificate which will serve as evidence that a particular product is certified.

Length of Certification Validity
Once a product is certified, it remains certified for the lifetime of the product unless and until the LoRa Alliance revokes the certification or the product is modified.

Certification Mark Logo Usage
Upon completion of certification, Alliance members will receive the LoRaWAN Certified logo shown below for use on equipment and packaging.

![LoRaWAN Certified Logo](image)

The use of the LoRaWAN Certified logo by Alliance members is expressly limited to use on certified products while membership is in good standing. For avoidance of doubt, although a product is typically certified for the lifetime of the product, the use of the LoRaWAN Certified logo is limited to use by Alliance members during membership in good standing.

Members should refer to the LoRa Alliance Logo Policy and the Alliance Brand Styleguide for proper use of the LoRaWAN Certified logo. Members of the Alliance may also receive other LoRa Alliance-authorized logos for use by the member in accordance with Alliance membership logo guidelines.
Certification Appeal Process

The LoRa Alliance maintains a procedure for the resolution of issues regarding the granting of certification. Certification applicants may appeal a decision regarding certification if they believe the certification policies were applied in error. An appeal application must be based upon either (1) a specific concern about the misapplication of the Certification Policy or (2) an alleged error on the part of an authorized test service provider or the Expert Review Panel.

The process for appeals is:

1. Applicant shall send an appeal request to cert.test@lora-alliance.org. The request is required to document the issue, the specific basis of the appeal and the corrective action requested. The Alliance will provide acknowledgement of receipt of the appeal.

2. The Chair of the Certification Committee and the CEO of the Alliance will consider the appeal and make a preliminary decision either to grant or reject the appeal. If the appeal is proposed for rejection on a preliminary basis, the appeal will be forwarded to the Appeals Committee for further consideration. A report on the status of the appeal will be given to the applicant.

3. In the case of appeals forwarded to the Appeals Committee for further consideration, the Appeals Committee will consider the appeal and make a decision to either to grant or to reject the appeal. If the appeal is rejected, the specific basis for rejection will be documented. A report on the final disposition of the appeal will be given to the applicant.

All parties shall treat any information related to an appeal as confidential information during the appeal process.

Revocation of Certification

The LoRa Alliance may revoke certification or participation in the certification process if any of the following occurs:

1) A product is found to be hazardous as defined in ISO Guide 27-1983.
2) The manufacturer has made any material misstatement of fact, or omission of fact, to the Alliance or its authorized test service providers.
3) The manufacturer fails to follow all applicable Alliance certification requirements.
4) The manufacturer is misusing LoRa Alliance trademarks. Examples of misuse include (but are not limited to) misapplying logos/icons, using logos with products that have not been certified or otherwise not following the LoRa Alliance Logo and Trademark Policy for Alliance members.
5) The manufacturer has engaged in any form of misconduct which compromises the integrity of the LoRa Alliance or the LoRaWAN Certification program.
6) The manufacturer continues using logos, trademarks or any other branding including without limitation, the LoRaWAN Certified certification mark, without permission of the Alliance after cessation of such manufacturer's Alliance membership status.
Prior to revoking any certification, the Alliance will provide written notice to the manufacturer of the issue and if applicable, steps necessary to resolve issues and take corrective action. If the manufacturer takes corrective action and successfully resolves all issues on a timely basis, the Alliance will withdraw its action for revocation. If the manufacturer takes corrective action and promptly resolves issues following the revocation of the certification, the Alliance may, at its sole discretion, take action to restore the certification, issue a new certification, or require the manufacturer to recertify its product. Corrective action will generally follow ISO Guide 27-1983 “Guidelines for corrective action to be taken by a certification body in the event of misuse of its mark of conformity”.

**TESTING PROCEDURES**

Testing for conformance to LoRa Alliance standards is performed by authorized test service providers using test plans developed by the Alliance.

**Test Plans**

The Alliance shall establish test plans to be used by authorized test service providers.

**Authorized Test House Services Providers**

The LoRa Alliance authorizes independent test house service providers (test service providers or ATH) to administer the testing associated with the LoRaWAN Certification program. The current list of authorized test service providers is maintained at the Alliance web site:

[www.lora-alliance.org](http://www.lora-alliance.org)

**Test Harnesses**

Test harnesses may be developed by authorized test house service providers for use in executing testing. The Alliance does not develop or distribute test harnesses. The Alliance has developed the LoRaWAN Certification Test Tool (LCTT) which may also be used by the ATHs to provide test services.

Test harnesses are not certified by the Alliance unless they comply with all requirements of a LoRaWAN Certified Product. Only authorized test service providers may claim to provide test harnesses used in certification testing.

**Requirements for Testing**

Manufacturers must provide any technical support structure required to assist in the implementation of their product into the test environment.

**Reporting of Test Results**

Authorized test service provider report results of successful tests to the LoRa Alliance. Unsuccessful test results are not reported to the Alliance unless an application for certification has been made and the Alliance requests reporting of test results.
The test reports are intended to conform to reporting as defined by ISO/IEC 17025:2005 Section 5.10 and at a minimum will include:

- **Test Information**: Location and dates of testing, any tracking or other information necessary to trace results such as test project numbers, responsible testing engineer

- **Tested Device**: Company, address, contact information, product name, hardware and software product versions, serial number, LoRaWAN device Class, and other information necessary to identify the device

- **Standard Used**: Name and version information

- **Test Plan**: Documentation of Test Plan and version numbers used or a list of test cases if a complete test plan is not used

- **Test Equipment**: Documentation of any equipment used in the test including test harness, script, sniffers, golden units, and other information necessary to identify the testing equipment including version information

- **Test Results**: List of individual tests conducted with individual test results

- **Test Results Summary**: Overall Pass / Fail

- **Test Results Observations**: Observations outside the scope of the test cases

- **Signatures**: Test engineer, any reviewer or quality engineers

**Certification by Similarity**

The LoRa Alliance may in its sole discretion consider granting Certification by Similarity. Certification by Similarity would allow a product derived from a previously tested and certified LoRaWAN product to be considered for certification based on its similarity to the tested certified product, depending on the differences between the two. Typically cosmetic differences would be allowed under principles of Certification by Similarity but different hardware, firmware or software would require individual certification testing. When certifying a module under Certification by Similarity, it is necessary to prove that that the module cannot be used in a way that the product’s Application software can interfere with the execution of the LoRaWAN protocol stack. If this cannot be proven, the module itself could not be certified and each product using that module must be certified instead. Notwithstanding the foregoing, the Alliance has no obligation to either allow or maintain ongoing Certification by Similarity.

**MODIFICATIONS AND REVISIONS**

**Modification of Certified Products**

Certification is awarded to a particular version of a product only. The original version of the product retains certification for the life of the product, unless revoked by action of the LoRa Alliance.
Any modification to that product will result in a new version and that version may not claim certification without going through the LoRaWAN Certification program. Depending upon the changes, the new version of the product may not require testing in order to be certified. Changes that affect conformance to LoRa Alliance standards (hardware, firmware or software changes) will typically require testing.

Cosmetic changes such as differences in packaging or color, for example, generally do not require testing. If it can be proven by the manufacturer to the satisfaction of the Alliance that there is no change to the applicable hardware or software then a full retest may not be required, and the existing certification already delivered may continue to be applicable.

**Revisions to LoRa Alliance Specifications and Testing Procedures**

In the interest of ongoing improvement in the quality of the compliance program, the LoRa Alliance may, from time to time, change the compliance testing procedures through a change to a test plan.

Because a product’s certification is good for the life of the product, there will be no requirements for vendors to go through certification again. However, the LoRa Alliance encourages vendors to resubmit their devices to test service providers for verification of compliance to those changes.

The LoRa Alliance will maintain records sufficient to identify the version of a test plan under which certified products were tested.

< End of Document >
LoRa Alliance, Inc. Certification Policies and Procedures
For Certification Affiliates

April 2020
INTRODUCTION
This document defines policies and procedures related to LoRaWAN Certification, the product certification and testing program implemented and maintained by the LoRa Alliance for Certification Affiliates. This document includes descriptions of:

- The LoRaWAN Certification program
- Types of certification
- Testing programs and authorized test services providers

NOTICE OF USE AND DISCLOSURE
Copyright © LoRa Alliance, Inc. (2020). All Rights Reserved. The information within this document is the property of the LoRa Alliance (the Alliance).

Elements of LoRa Alliance specifications may be subject to third party intellectual property rights, including without limitation, patent, copyright or trademark rights (such a third party may or may not be a member of LoRa Alliance). The Alliance is not responsible and shall not be held responsible in any manner for identifying or failing to identify any or all such third party intellectual property rights.

This document and the information contained herein are provided on an AS IS basis and THE ALLIANCE DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO (A) ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OF THIRD PARTIES (INCLUDING WITHOUT LIMITATION ANY INTELLECTUAL PROPERTY RIGHTS INCLUDING PATENT, COPYRIGHT OR TRADEMARK RIGHTS) OR (B) ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NONINFRINGEMENT.

IN NO EVENT WILL THE ALLIANCE BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF BUSINESS, LOSS OF USE OF DATA, INTERRUPTION OF BUSINESS, OR FOR ANY OTHER DIRECT, INDIRECT, SPECIAL OR EXEMPLARY, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY KIND, IN CONTRACT OR IN TORT, IN CONNECTION WITH THIS DOCUMENT OR THE INFORMATION CONTAINED HEREIN, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH LOSS OR DAMAGE.

The above notice and this paragraph must be included on all copies of this document that are made.

LoRa Alliance, Inc.
5177 Brandin Court,
Fremont, CA 94538 USA

Note: All Company, brand and product names may be trademarks that are the sole property of their respective owners and used under license or by permission.
LoRaWAN CERTIFICATION PROGRAM

LoRaWAN Certification is the program which enables certification of products that conform to LoRa Alliance standards. The program defines various types of certifications and related policies including requirements for certification and testing programs and leverages the expertise of subject matter experts to ensure that only quality products earn LoRaWAN Certified™ product status.

LoRaWAN Certified generally follows international standards for the definition and operation of a certification program. In particular, LoRaWAN Certified is designed as a Type 1b certification program as defined in ISO/IEC Guide 17067: 2013. Type 1b systems consist of several types of activities:

- Determination of product characteristics: This is achieved through testing of submitted samples performed by independent authorized test service providers.
- Evaluation: This is achieved by formally evaluating the results of testing.
- Decision: This is the stage that controls granting, maintaining and extending suspending or withdrawing certification.
- Licensing: Licensing refers to granting, suspending, or withdrawing the rights to use certificates or marks such as logos.

Testing Versus Certification

The LoRaWAN Certification program maintains a strict distinction between testing and certification. Testing is the process verifying conformance to LoRa Alliance standards. Certification is granting official recognition that individual products conform to LoRa Alliance standards and that product manufacturers are conforming to all the relevant requirements and policies of the LoRaWAN Certification program. Only the LoRa Alliance may grant certification.

LoRa Alliance Certification Committee

The LoRa Alliance Certification Committee is responsible for development of policies related to certification and coordination with other technical working groups on certification related issues. The Certification Committee is chartered by the LoRa Alliance Board of Directors and is composed of representatives of member organizations of the Alliance serving on a volunteer basis.

LoRa Alliance Expert Review Panel

The Expert Review Panel is a panel that provides oversight technical advice to the LoRaWAN Certified Program. The Expert Review Panel is composed of representatives from LoRa Alliance member companies with requisite membership class appointed by the Certification Committee. The Expert Review Panel may also include representatives of LoRa Alliance Authorized Test House Service providers on a non-voting basis. The Expert Review Panel advises on validation of test service providers and may provide other technical advice on matters including review of test plans, review of interoperability concerns discovered in the field, review of non-compliant results submitted by test service providers, and support of the Certification Committee in resolution of disputes.
LoRa Alliance Certification Appeals Committee

The LoRa Alliance maintains a Certification Appeals Committee to address certification appeals. The Appeals Committee is composed of the CEO of the Alliance, the Director of Certification, and one or more selected representatives of authorized test house service providers that have not been involved in the certification in question. The Director of Certification of the Alliance acts as the chairperson of the Appeals Committee.

CERTIFICATION PROCEDURES

Conditions and Requirements for Certification

Eligibility Status
To be eligible to submit a product for certification or compliance testing and to be granted certification, a company must either be a member of the LoRa Alliance in good standing or a Certification Affiliate with a current Certification Affiliate Agreement with the Alliance. This version of the Certification Policies and Procedures only applies to Certification Affiliates.

Submission of Application
Certification is granted to a product based on an application submitted on behalf of a Certification Affiliate as outlined below.

Payment of Testing and Certification Fees
There are two fees associated with the LoRaWAN Certification program: testing fees and certification fees. Testing fees are set by individual authorized test house service providers and retained by such test service providers. Certification fees for Certification Affiliates are set by the Alliance and are in addition to ongoing annual certification affiliate fees.

Conformance to Standard
Certification is awarded based on a product’s conformance to a LoRa Alliance standard and the manufacturer’s compliance with other requirements. Conformance is verified by testing performed by an authorized test house service provider and demonstrated by a test report documenting successful completion of the entire test plan including all test cases for mandatory features and test cases for any optional features as required. The test service providers report any relevant information regarding the product’s conformance to a standard in the test report.

The Alliance may permit certification to a previous version of a standard following release of a new version of a standard. The Alliance may in its discretion impose time restrictions on certifying products to older versions of the specification.
**Documentation of Product**

The LoRa Alliance requires information sufficient to identify a product for the purpose of testing and before granting certification including:

- Declaration of Conformity
  - Version numbers of product hardware, software, and firmware
  - For end products, a Stock Keeping Unit (SKU) and/or Universal Product Code (UPC)
  - Signature of a representative of the product manufacturer
  - Signature of a representative of the authorized test service provider performing product testing
- Product description
- Product image

**Certification Process**

The certification process begins after the manufacturer completes development of the product to be certified.

1) Testing: As described in more detail in the section on Testing Procedures below, testing for conformance to LoRa standards is performed by Alliance authorized test service providers using test plans developed by the Alliance. Each test service provider has its own processes for product submission and will provide details on requirements for submission. All test service providers will require submission of a Declaration of Conformity for the submitted product. In order to successfully pass test plans, a product must pass all mandatory test cases and any optional test cases that are applicable to the product based on the functionality it supports. In addition to the explicit functionality being checked by the test cases, the submitted product must not exhibit any behavior which is contrary to the behavior detailed in the underlying specifications in order to be considered to have passed a test plan.

2) Reporting: Test service providers will submit test results to the Certification Affiliate. Certification Affiliates will submit the test reports through the method(s) communicated by the Alliance.

3) Application: An application is provided to the Alliance directly from the applicable test service provider following successful completion of testing by a Certification Affiliate in good standing.
4) Processing: The Alliance Help Desk personnel process applications under the direction of the Alliance. Applications are processed for completeness to all requirements as described in Alliance policies including:

   a. Submission of all required documentation
   b. Certification Affiliate status in good standing
   c. Successful completion of testing
   d. Payment of applicable fees

5) Certification: Only the LoRa Alliance may grant certification and a product is only certified when the Alliance issues certification.

Certificates
In the case of certification being granted, the LoRa Alliance provides a certificate which will serve as evidence that a particular product is certified.

Length of Certification Validity
Once a product is certified, it remains certified for the lifetime of the product unless and until the LoRa Alliance revokes the certification or the product is modified.

Certification Mark Logo Usage
Upon completion of certification, Certification Affiliates will receive the LoRaWAN Certified logo shown below for use on equipment and packaging.

![LoRaWAN Certified logo](image)

The use of the LoRaWAN Certified logo is expressly limited to use on certified products by Certification Affiliates during the term of the respective Certification Affiliate Agreement with the Alliance. For avoidance of doubt, although a product is typically certified for the lifetime of the product, the use of the LoRaWAN Certified logo is limited to use by Certification Affiliates during the term of the Certification Affiliate Agreements.

Certification Affiliates should refer to the Certification Affiliate Agreement and the LoRaWAN Certified logo policy for proper use of the LoRaWAN Certified logo and also refer to the LoRaWAN Certified Styleguide regarding graphic presentation of the LoRaWAN Certified logo.
Certification Appeal Process

The LoRa Alliance maintains a procedure for the resolution of issues regarding the granting of certification. Certification applicants may appeal a decision regarding certification if they believe the certification policies were applied in error. An appeal application must be based upon either (1) a specific concern about the misapplication of the Certification Policy or (2) an alleged error on the part of an authorized test service provider or the Expert Review Panel.

The process for appeals is:

1. Applicant shall send an appeal request to cert.test@lora-alliance.org. The request is required to document the issue, the specific basis of the appeal and the corrective action requested. The Alliance will provide acknowledgement of receipt of the appeal.

2. The Chair of the Certification Committee and the CEO of the Alliance will consider the appeal and make a preliminary decision either to grant or reject the appeal. If the appeal is proposed for rejection on a preliminary basis, the appeal will be forwarded to the Appeals Committee for further consideration. A report on the status of the appeal will be given to the applicant.

3. In the case of appeals forwarded to the Appeals Committee for further consideration, the Appeals Committee will consider the appeal and make a decision to either to grant or to reject the appeal. If the appeal is rejected, the specific basis for rejection will be documented. A report on the final disposition of the appeal will be given to the applicant.

All parties shall treat any information related to an appeal as confidential information during the appeal process.

Revocation of Certification

The LoRa Alliance may revoke certification or participation in the certification process if any of the following occurs:

1) A product is found to be hazardous as defined in ISO Guide 27-1983.
2) The manufacturer has made any material misstatement of fact, or omission of fact, to the Alliance or its authorized test service providers.
3) The manufacturer fails to follow all applicable Alliance certification requirements.
4) The manufacturer is misusing LoRa Alliance trademarks. Examples of misuse include (but are not limited to) misapplying logos/icons, using logos with products that have not been certified or otherwise not following the LoRaWAN Certified Logo and Trademark Policy for Certification Affiliates.
5) The manufacturer has engaged in any form of misconduct which compromises the integrity of the LoRa Alliance or the LoRaWAN Certification program.
6) The manufacturer continues using logos, trademarks or any other branding including without limitation, the LoRaWAN Certified certification mark, without permission of the Alliance after cessation of such manufacturer’s Certification Affiliate status.
Prior to revoking any certification, the Alliance will provide written notice to the manufacturer of the issue and if applicable, steps necessary to resolve issues and take corrective action. If the manufacturer takes corrective action and successfully resolves all issues on a timely basis, the Alliance will withdraw its action for revocation. If the manufacturer takes corrective action and promptly resolves issues following the revocation of the certification, the Alliance may, at its sole discretion, take action to restore the certification, issue a new certification, or require the manufacturer to recertify its product. Corrective action will generally follow ISO Guide 27-1983 “Guidelines for corrective action to be taken by a certification body in the event of misuse of its mark of conformity”.

TESTING PROCEDURES

Testing for conformance to LoRa Alliance standards is performed by authorized test service providers using test plans developed by the Alliance.

Test Plans
The Alliance shall establish test plans to be used by authorized test service providers.

Authorized Test House Services Providers
The LoRa Alliance authorizes independent test house service providers (test service providers or ATH) to administer the testing associated with the LoRaWAN Certification program.

The current list of authorized test service providers is maintained at the Alliance web site: www.lora-alliance.org

Test Harnesses
Test harnesses may be developed by authorized test house service providers for use in executing testing. The Alliance does not develop or distribute test harnesses. The Alliance has developed the LoRaWAN Certification Test Tool (LCTT) which may also be used by the ATHs to provide test services.

Test harnesses are not certified by the Alliance unless they comply with all requirements of a LoRaWAN Certified Product. Only authorized test service providers may claim to provide test harnesses used in certification testing.

Requirements for Testing
Manufacturers must provide any technical support structure required to assist in the implementation of their product into the test environment.

Reporting of Test Results
Authorized test service provider report results of successful tests to the LoRa Alliance. Unsuccessful test results are not reported to the Alliance unless an application for certification has been made and the Alliance requests reporting of test results.
The test reports are intended to conform to reporting as defined by ISO/IEC 17025:2005 Section 5.10 and at a minimum will include:

- **Test Information:** Location and dates of testing, any tracking or other information necessary to trace results such as test project numbers, responsible testing engineer
- **Tested Device:** Company, address, contact information, product name, hardware and software product versions, serial number, LoRaWAN device Class, and other information necessary to identify the device
- **Standard Used:** Name and version information
- **Test Plan:** Documentation of Test Plan and version numbers used or a list of test cases if a complete test plan is not used
- **Test Equipment:** Documentation of any equipment used in the test including test harness, script, sniffers, golden units, and other information necessary to identify the testing equipment including version information
- **Test Results:** List of individual tests conducted with individual test results
- **Test Results Summary:** Overall Pass / Fail
- **Test Results Observations:** Observations outside the scope of the test cases
- **Signatures:** Test engineer, any reviewer or quality engineers

**Certification by Similarity**

Certification by Similarity is not available to Certification Affiliates.

**MODIFICATIONS AND REVISIONS**

**Modification of Certified Products**

Certification is awarded to a particular version of a product only. The original version of the product retains certification for the life of the product, unless revoked by action of the LoRa Alliance.

Any modification to that product will result in a new version and that version may not claim certification without going through the LoRaWAN Certification program. Depending upon the changes, the new version of the product may not require testing in order to be certified. Changes that affect conformance to LoRa Alliance standards (hardware, firmware or software changes) will typically require testing.

Cosmetic changes such as differences in packaging or color, for example, generally do not require testing. If it can be proven by the manufacturer to the satisfaction of the Alliance that there is no change to the applicable hardware or software then a full retest may not be required, and the existing certification already delivered may continue to be applicable.
Revisions to LoRa Alliance Specifications and Testing Procedures

In the interest of ongoing improvement in the quality of the compliance program, the LoRa Alliance may, from time to time, change the compliance testing procedures through a change to a test plan.

Because a product’s certification is good for the life of the product, there will be no requirements for vendors to go through certification again. However, the LoRa Alliance encourages vendors to resubmit their devices to test service providers for verification of compliance to those changes.

The LoRa Alliance will maintain records sufficient to identify the version of a test plan under which certified products were tested.

< End of Document >