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ZIGBEE ALLIANCE CERTIFICATION POLICY

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114 1 INTRODUCTION

115 This document defines policies related to ZigBee Certified, the certification and testing program of the Zigbee®
 116 Alliance. It describes:

- 117 • The Zigbee Certified Program
- 118 • Types of certification
- 119 • Levels of certification
- 120 • Certification Programs
- 121 • Testing programs and authorized test service providers
- 122 • Golden Units and processes for selection and revision
- 123 • Certification by similarity and guidelines for retesting

124 1.1 Scope and Purpose

125 This document defines the Certification Programs supported by Zigbee Alliance. This includes the process and
 126 rules for the entire life cycle of a program including specification validation, testing, grace period, etc. It is not
 127 the intent of this document to define the organizational entities responsible for managing any part of this
 128 process, except those required to be visible outside the Zigbee Alliance, such as the authority to certify and
 129 resolve conflict.

130 1.2 Structure of this Document

131 This document first defines processes and rules that are common to many programs. Even in the common
 132 process there are levels and dependencies. After the common Sections, this document then defines each active
 133 program (legacy and current), in terms of requirements and additions to the common process.

134 1.3 References

135 This document refers to several other documents related to details of the certification policy.

- 136 [R1] Zigbee document 13-0625: Technical Structure, Process and Procedures
- 137 [R2] Zigbee document 08-0123: Test Event Rules of Engagement
- 138 [R3] Zigbee document 05-3739: Zigbee Certified Logo and Trademark Policy
- 139 [R4] Zigbee document 08-5185: Qualification and Validation of Test Service Providers
- 140 [R5] Zigbee document 11-5456: Master Cluster List
- 141 [R6] Zigbee document 05-3874: Zigbee Manufacturer Code Database
- 142 [R7] Zigbee document 12-0114: Zigbee Green Power SrcID database

143 1.4 Abbreviations and Terminology

144 *Table 1 – Abbreviations and Terminology*

Certification Program	A well-defined process, that approves interpretation, validates conformance and interoperability to a set of specifications, and when successfully completed, allows the certification authority to issue a certificate
Certified Product	A Product that has been certified under the Product Certification Program
Compliant Platform	A Platform that has been certified under the Compliant Platform Certification Program
Compliant Platform Certification Program	A Certification Program that validates a Platform for purposes of certification

DUT	Device Under Test
Golden Unit	A Compliant Platform or Certified Product chosen to be used as part of a Program to test interoperability.
GU	Golden Unit
MAC	Media Access Control
ODM	Original Design Manufacturer
OEM	Original Equipment Manufacturer
PHY	Physical Layer
PICS	Protocol Implementation Conformity Statement (list of supported functions)
Platform	An implementation of a Stack
Product	An implementation of a Standard
Product Certification Program	A Certification Program validating a Product for purposes of certification
Program	See Certification Program
RF	Radio Frequency
SKU	Stock Keeping Unit (unique model identifier)
Stack	An approved set of base specifications upon which a Standard is built (e.g. Zigbee PRO, RF4CE, etc.).
Standard	A approved set (or vertical Stack) of specifications, built upon a Stack, defining interoperable behavior, on which interoperable applications can be built (e.g. ZSE, Zigbee 3.0, ZRC, etc.).
Test Event	Organized event to test and validate specification implementations
Test Harness	Test harness that is developed by an authorized test service provider for use in executing testing and approved by Zigbee Alliance
Zigbee Product	Product
Zigbee Standard	Standard

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146

2 ZIGBEE CERTIFIED PROGRAM

147 This Section describes the general process and rules that are common for all Certification Programs.

148

2.1 Description

149 Zigbee Certified is the overall program which enables certification of Products and Compliant Platforms that
 150 conform to Zigbee Alliance Standards. The program defines various types of certifications and related policies
 151 including requirements for certification and testing programs and leverages the expertise of hundreds of
 152 engineers and business people to ensure only quality Products earn Zigbee Certified Product status.

153 Zigbee Certified generally follows international Standards for the definition and operation of a Certification
154 Program. In particular, Zigbee Certified is designed as a Type 1b Certification Program as defined in ISO/IEC
155 Guide 67: 2004. Type 1b systems consist of several types of activities:

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

163 2.2 Testing Versus Certification

164 The Zigbee Certified program maintains a strict distinction between testing and certification. Testing is the
165 process verifying conformance to Zigbee Standards. Certification is granting official recognition that a Product
166 conforms to a Zigbee Standards and that a Product manufacturer conforms to all the relevant policies of the
167 Zigbee Certified program.

168 Only Zigbee Alliance may grant certification.

169 2.3 Zigbee Responsibilities

170 The Test and Certification Oversight Committee (TCOC) of the Zigbee Board of Directors shall be responsible
171 for development of policies related to certification (including this document) and working with the Zigbee
172 Certification Advisory working group and other technical working groups on certification related issues. The
173 TCOC is made up of volunteers from members of the Zigbee Board of Directors.

174 2.4 Director of Zigbee Certified

175 The Director of Zigbee Certified shall be named by Alliance management and will be responsible for a variety
176 of functions related to administering the Zigbee certified program including processing of certification
177 applications, issuing of certificates, consulting with the TCOC on certification and testing policy matters, and
178 interpreting certification policies on a day-to-day basis.

179 In accordance with ISO/IEC Guide 65, the Director of Zigbee Certified has decision making authority in regard
180 to granting certifications and other related tasks.

181 2.5 Expert Review Panel

182 The Expert Review Panel is a team of volunteers from member companies nominated by the Certification
183 Advisory working group and approved by the TCOC. The Panel provides expert technical advice to the Zigbee
184 Certified program. The function of the Panel is defined in document 08-5185 "Qualification and Validation of
185 Test Service Providers". An up-to-date list of the current Panel members is maintained at the front of the
186 Certification Advisory working group meeting minutes document.

187 Aside from their role in validation of test service providers, the Expert Review Panel may be called on from
188 time to time to provide other expert advice in regard to other matters such as review of test plans, review of
189 interoperability concerns discovered in the field or to assist the Director of Zigbee Certified in resolution of
190 disputes.

191 2.6 Appeals

192 The Zigbee Alliance has a procedure for the resolution of issues regarding the granting of certification.

193 Certification applicants may appeal a decision regarding certification if they believe this certification policy was
194 applied in error. The basis of the appeal shall be (1) a specific concern about the misapplication of the policy, or
195 (2) an error on the part of an authorized test service provider or the Director of Zigbee Certified.

196 2.6.1 Appeals Process

197 The process for appeals shall be:

- 198 • Applicant shall send an appeal request to certification@zigbee.org. The request shall
199 document the issue, the specific basis of the appeal and the corrective action requested.
- 200
- 201 • Acknowledgement of receipt of the appeal by either the Director of Zigbee Certified or the
202 President and Chief Executive Officer of Zigbee Alliance shall be provided.
- 203
- 204 • The Director of Zigbee Certified and the President and Chief Executive Officer of Zigbee
205 Alliance shall consider the appeal.
- 206
- 207 • A preliminary decision shall be made either to have Zigbee Alliance take corrective action or
208 to reject the appeal.
- 209
- 210 • If corrective action by Zigbee Alliance is to be taken, the Director of Zigbee Certified or the
211 President and Chief Executive Officer of Zigbee Alliance shall implement the corrective
212 action.
- 213
- 214 • If the appeal is proposed for rejection, the appeal shall be forwarded to the Appeals
215 Committee for consideration.
- 216
- 217 • A report on the status of the appeal shall be given to the applicant.
- 218
- 219 • The Appeals Committee shall consider the appeal.
- 220
- 221 • A decision shall be made either to have Zigbee Alliance take corrective action or to reject the
222 appeal.
- 223
- 224 • If corrective action by Zigbee Alliance is to be taken, the Director of Zigbee Certified or the
225 President and Chief Executive Officer of the Zigbee Alliance shall implement the corrective
226 action.
- 227
- 228 • If the appeal is rejected, the specific basis for rejection shall be documented.
- 229
- 230 • A report on the final disposition of the appeal shall be given to the applicant by either the
231 Director of Zigbee Certified or the President and Chief Executive Officer of Zigbee Alliance.

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

233 2.6.2 Appeals Committee

234 The Zigbee Alliance shall have a committee to address appeals. The Appeals Committee shall consist of the
235 Chief Executive Officer of the Alliance, the chairperson of the TCOC and a representative of each authorized
236 test service provider. The Chief Executive Officer of the Alliance shall act as chairperson of the Appeals
237 Committee.

238 In order to insure the impartiality of the appeals process, any member of the Committee who may have any
239 conflict of interest with the party making the appeal shall disclose the conflict. The member will not be allowed
240 to vote or participate in Committee activities regarding the appeal. Conflicts of interest are defined as, at a
241 minimum, a financial or competitive relationship with the appealing party. The Committee members themselves
242 shall decide if other issues are conflicts of interest.

243 2.7 Levels of Certification

244 The Zigbee Alliance offers two levels of Standards compliance –Compliant Platform and Certified Product.

2.7.1 Compliant Platform

The Zigbee Compliant Platform program defines a rigorous evaluation and certification process for a Platform before it can be certified as a Compliant Platform and engineered into a Product. Each Platform is comprised of a radio and a microprocessor with storage running Zigbee firmware. The Platform is tested for compliance to a set of Zigbee specifications (See Section 6 (Certification Programs)).

This program ensures the supply chain has a solid foundation for Products destined for personal or commercial use. Successfully completing this testing allows the member to have its Platform recognized by the Alliance as a Compliant Platform.

2.7.2 Certified Product

A Certified Product program defines the testing requirements and a process to validate a Product's conformance to a Standard (See Section 6 (Certification Programs)). The Product must be fully compliant to the Standard(s) and successfully execute all mandatory and implemented optional commands. Successful certification allows the Product to be recognized by the Alliance as a Certified Product and use a Certified Product logo. A Compliant Platform is a fundamental building block of a Certified Product. With few exceptions (defined in this document), the use of a certified Compliant Platform is a mandatory prerequisite to assessment as a Certified Product.

2.8 Requirements for Certification

Certification may be awarded based on a Product's successful completion of the process defined in a Certified program (See Section 6 (Certification Programs)).

2.8.1 Membership

To submit a Product for certification or compliance testing and to be granted certification, a company must be a member in good standing of the Zigbee Alliance. The Alliance has several different types of membership which are documented on its web site: <http://www.zigbee.org>.

2.8.2 Conformance to Standard

Conformance is verified by testing performed by an authorized test 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 implemented optional features as identified by the PICS. The test service providers shall report any information relevant regarding the Product's conformance to a Standard in the test report.

2.8.3 Documentation of Product

The Zigbee Alliance shall require information sufficient to identify a Product before granting certification including:

- 1) Declaration of Conformity (DoC or DOC):
 - a) Version numbers of Product hardware, software, and firmware
 - b) For a Product, a Stock Keeping Unit (SKU) and/or Universal Product Code
 - c) For a Product, the Compliant Platform upon which the Product is based
 - d) Signature of a representative of the Product manufacturer
 - e) Signature of a representative of the authorized test service provider performing Product testing
- 2) Protocol Implementation Conformance Statements (PICS):
 - a) including mandatory and optional features supported by the Product
- 3) Non-declaratory information that is also requested:
 - a) Product description
 - b) Product photo

289 2.9 Process for Certification

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

291 **Testing:** Testing for conformance to a Standard is performed by Alliance authorized test service
292 providers using test plans developed by the Alliance. The Alliance maintains a list of authorized test
293 service providers on its web site at <http://www.zigbee.org>. Each test service provider has a process for
294 Product submission and will provide details on how to submit Products. All test service providers will
295 require submission of a Declaration of Conformity and a Protocol Implementation Conformance
296 Statement for the submitted Product. In order to successfully pass test plans, a Product must pass all
297 mandatory test cases and any optional test cases that are applicable to the Product based on the
298 functionality it supports. In addition to the explicit functionality being checked by the test cases, the
299 submitted Product must not exhibit any behavior which is contrary to the behavior detailed in the
300 underlying specifications, in order to be considered to have passed a test plan.

301 **Reporting:** Test service providers will submit test results directly to the Alliance.

302 **Application:** The Alliance grants certifications based on an application. The application is web based
303 and is available in the Member's Area of <http://www.zigbee.org> and consists of the information
304 described in Section 2.8.3 above.

305 **Processing:** The Alliance staff processes applications under the direction of the Director of Zigbee
306 Certified. Applications are processed for completeness to all requirements as described in Alliance
307 policies including:

- 311 • Submission of all required documentation
- 312 • Membership in the Alliance
- 313 • Completion of testing
- 314 • Payment of applicable fees

315 **Certification:** Only Zigbee Alliance may grant certification and a Product is only certified when the
316 Alliance issues certification. The Alliance will issue certificates as evidence of successful certification.

317 A test service provider may occasionally submit non-compliant results to the Director of Zigbee Certified for
318 him/her to make a decision on the issue of certification.

320 2.10 Certificates

321 The Zigbee Alliance shall provide a certificate which will serve as evidence that a particular Product is Zigbee
322 Certified.

323 2.11 Logo Usage

324 The Zigbee Alliance owns the trademarks and logos that may be used to identify various Products that are
325 Zigbee Certified.

326 Use of any Zigbee Alliance trademarks and logos, including for labelling Products as certified by Zigbee
327 Alliance is limited to Zigbee members and is subject to the Zigbee Alliance Trademark and Logo Usage
328 Guidelines and Terms available at www.zigbee.org.

329 2.12 Length of Certification

330 Once a Product is certified, it remains certified for the lifetime of the Product unless Zigbee Alliance revokes the
331 certification or the Product is modified.

332 Modifications include any changes to the Product. However, not all modifications will require retesting of a
333 Product in order to be certified. The Alliance maintains guidelines about modifications that require retesting and
334 will determine whether retesting is required for any particular modification.

335 For complete information, refer to Section 3.6 (Certification by Similarity).

336 2.13 Revocation of Certification

337 The Zigbee Alliance may also revoke certification or participation in the certification process if one or more of
338 the following occurs:

- 339 • A Product is found to be hazardous as defined in ISO Guide 27-1983.
- 340
- 341 • The manufacturer has made any material misstatement of fact, or omission of fact, to the
342 Alliance or its authorized test service providers.
- 343
- 344 • The manufacturer fails to follow all Alliance certification requirements.
- 345
- 346 • The manufacturer fails to use Zigbee Alliance trademarks and logos in accordance with the
347 Zigbee Alliance Trademark and Logo Usage Guidelines and Terms available at
348 www.zigbee.org. Examples of failure to use in accordance with the Zigbee Alliance
349 Trademark and Logo Usage Guidelines and Terms include (but are not limited to)
350 misapplying logos/icons, and using logos with Products that have not been certified.
- 351
- 352 • The manufacturer has engaged in any form of misconduct which compromises the integrity of
353 Zigbee Alliance or the Zigbee Certified program.
- 354
- 355 • The manufacturer leaves Zigbee Alliance and continues using logos, trademarks or any other
356 Zigbee Alliance branding.
- 357
- 358 • The member is in violation of the member agreement, other agreement with Zigbee Alliance,
359 or a Zigbee Alliance policy or procedure.

360 Prior to revoking any certification, the Alliance shall notify the manufacturer with details and steps needed to
361 resolve issues and take corrective action. After revocation, and the manufacturer made corrective action and
362 successfully resolve all issues, the Alliance may, at its discretion, restore the certification or issue a new
363 certification.

364 Corrective action shall follow ISO Guide 27-1983 “Guidelines for corrective action to be taken by a certification
365 body in the event of misuse of its mark of conformity”.

366 2.14 Testing and Certification Fees

367 There are two fees associated with the Zigbee Certified program: testing and certification.

368 Testing fees are set by the individual authorized test service providers.

369 Certification fees are set by Zigbee Alliance and vary based on the type of membership in the Alliance. The
370 current fee schedule is available at <http://www.zigbee.org> or by contacting the Alliance.

371 2.15 Manufacturer-specific identification and information usage

372 Upon request, the ZigBee Alliance assigns to a Member a manufacturer-specific identification which is
373 maintained by the Alliance. An example of such a manufacturer-specific identification is a unique Manufacturer
374 Code, maintained in the “Zigbee Manufacturer Code Database” [R6] or a unique pool of GPD SourceIDs,
375 maintained in the “Zigbee Green Power SrcID database” [R7].

376 Member companies are responsible for obtaining the applicable manufacturer-specific identification prior to
377 certifying a product with the Alliance, and for using it correctly.

378 Members are responsible for correctly identifying manufacturer-specific functionality, if any, following the
379 Alliance technical specifications.

380 A company SHALL only use their own manufacturer-specific identification to identify their own devices and
381 their functionality. Usage of another party's manufacturer-specific identification is only permitted with a proof
382 of consent of that party.

383 This usage policy also applies to the Certification Transfer Program. A company certifying a product via the
384 Certification Transfer Program SHALL obtain its own manufacturer-specific identification to use within their
385 newly certified product. Usage of the manufacturer-specific identification of the previously Certified Product is
386 only permitted with a proof of consent of the manufacturer of that Product.

387 3 TESTING

388 This Section defines the process for testing that is common to Certification Programs and the final development
389 of Certification Programs. Testing for conformance to Zigbee Standard or Stack is performed by Alliance
390 authorized test service providers using test plans developed by the Alliance.

391 3.1 Test Plans

392 The test plan must, at a minimum, cover all PICS related items. This must be confirmed by means of a PICS-to-
393 Test-Case mapping. The test plan will undergo standard approval as part of the process detailed in Policies &
394 Procedures (document 13-0625) before formal release. In order to be finalized, and approved, a test plan must
395 undergo validation at a Specification Validation Event (SVE). More details regarding the SVE can be found in
396 document 08-123 Test Event Rules of Engagement. Features that are certifiable are listed in document 11-5456
397 Master Cluster List.

398 The Zigbee Alliance will maintain the list of current test plans, associated PICS, any errata on the Zigbee
399 Alliance website.

400 3.2 Authorized Test Service Providers

401 The Zigbee Alliance authorizes independent test service providers to administer the testing associated with the
402 Zigbee Certified program. The process for selecting and qualifying test service providers is maintained in
403 document 08-5185.

404 The current list of authorized test service providers is maintained at the Alliance web site:
405 <http://www.zigbee.org>.

406 3.3 Test Harness

407 A Test Harness is an automated test tool that is designed to execute a defined test procedure and deliver
408 Pass/Fail decision based on the observed behavior of a Device Under Test based on well-defined criteria. Test
409 harnesses could be in use in the various Zigbee Certified test programs.

410 3.3.1 Zigbee Alliance Test Harness

411 The Zigbee Alliance may have a Test Harness developed for use in one or more of its Certification Programs
412 defined in this document. Where the Alliance has its own Test Harness, this harness shall be the one official
413 Test Harness used by all authorized test service providers in the execution of testing activities for the given
414 Certification Program.

415 Maintenance of a Zigbee Alliance Test Harness and associated test scripts is managed, updated and validated
416 through existing Zigbee Alliance processes (supported by member efforts).

417 3.3.2 Test House Test Harness

418 Where there is no applicable Zigbee Alliance Test Harness available for a given Certification Program,

419 Authorized Test Service Providers may (at their own discretion) create Test Harnesses (or other test tools) for
420 the execution of the testing procedures associated with the given program. The Zigbee Alliance shall have
421 access to these Authorized Test Service Provider developed testing tool(s) for the sole purpose of auditing the
422 service provider's conformance to the test validation procedures (See document 08-5185).

423 3.4 Requirements for Testing

424 3.4.1 Compliant Platform Testing

425 The guidelines for Compliant Platform testing are as follows:

- 426 • Platforms submitted for testing must be built on compliant IEEE 802.15.4 PHY/MAC layers,
427 Compliance to IEEE 802.15.4 shall be determined by successful completion of the testing requirements
428 described on document 14-0332 (Zigbee IEEE 802.15.4 Level Test Specification) at one of the Zigbee
429 authorized test service providers,
- 430 • Manufacturers must provide any technical support structure required to assist in the implementation of
431 their Product into the test environment,
- 432 • The test is non-destructive and will be applied using the functionalities given by the specific Platform
433 tested, and
- 434 • Test service providers can provide more information.

435

436 3.4.2 Certified Product Testing

437 The guidelines for Certified Product testing are:

- 438 • A Product submitted for testing must be built on a certified Compliant Platform,
- 439 • Manufacturers must provide any technical support structure required to assist in the implementation of
440 their Product into the test environment,
- 441 • The test is non-destructive and will be applied using the functionalities given by the Product tested,
- 442 • Test service providers can provide more information, and
- 443 • For the purposes of testing test (security) certificates are to be used.

444 3.4.3 Testing Samples

445 Manufacturer applying for certification must leave at least one sample of the Device Under Test (DUT), if
446 required by the test service provider to satisfy ISO17025. These samples will be used for traceability and
447 reference in case of future contention of results or when deemed necessary. A sample consists of:

- 448 • Exact hardware that the device will be certified on,
- 449 • Same firmware as the one the DUT passed the certification testing on, and
- 450 • Any software/tools pertaining to the device and its certification necessary to reproduce the test plan
451 testing.

452 In the case where the test service provider in question already has the hardware configuration (from previous
453 certification or otherwise), and if the test service provider has the tools (both hardware and software) needed to
454 flash new firmware onto the devices, a manufacturer may simply send the test service provider a copy of the
455 new firmware as the sample for the DUT.

456 3.5 Reporting of Test Results

457 Authorized test service provider shall report results of successful tests directly to Zigbee Alliance. Unsuccessful
458 test results are not reported to the Alliance unless an application for certification has been made and the Alliance
459 requests reporting of test results.

460 The test reports shall conform to reporting as defined by ISO/IEC 17025:2005 Section 5.10 and at a minimum
461 shall include:

- 462 • Test Information: Location and dates of testing, any tracking or other information necessary to
463 trace results such as test project numbers, responsible testing engineer,
- 464 • Tested Device: Company, address, contact information, Product name, hardware and software
465 Product versions, serial number, Zigbee device type, and other information necessary to
466 identify the device,
- 467 • Type of Test: Compliant Platform, or Certified Product,
- 468 • Standards: Name and version information,
- 469 • Test Plan: documentation of Test Plan and version numbers used or a list of test cases if a
470 complete test plan is not used,
- 471 • Test Equipment: Documentation of any equipment used in the test including Test Harness,
472 script, sniffers, GUs, and other information necessary to identify the testing equipment
473 including version information,
- 474 • Test Results: List of individual tests conducted with individual test results,
- 475 • Test Results Summary: Overall Pass / Fail,
- 476 • Test Results Observations: Observations outside the scope of the test cases, and
- 477 • Signatures: Test engineer, any reviewer or quality engineers.

487 3.6 Certification by Similarity

488 The Zigbee Alliance offers a Certification by Similarity program. The program allows a Product that is derived
489 from a previously tested and certified Product to be considered for certification based on its similarity to the
490 tested certified Product depending on the differences between the two. The purpose of the program is to speed
491 time-to-market and to minimize costs.

492 For complete information on this process See Section 7 (Certification by Similarity).

493 3.7 Testing Events

494 A Zigbee Alliance Test Event is defined in document 08-0123 Test Event Rules of Engagement.

495 3.8 Features Not Previously Certified

496 A feature that has not been previously tested during an official specification Test Event cannot be certified. A
497 feature is defined as an attribute of an implementation such as support for a particular cluster in a Zigbee
498 Alliance Standard. A feature becomes validated (and therefore testable and certifiable) only when the following
499 condition(s) are satisfied:

500 Three separate implementations of the feature must be tested against three separate implementations of the
501 complementary side of that feature (e.g. server against client) through Zigbee Alliance:

- 502 • One of the implementations, but no more than one, may be a Test Harness from an authorized test
503 service provider.
- 504 • A “separate implementation” is defined as an implementation developed independently from other
505 implementations by a different member of Zigbee Alliance.
- 506 • When a test case is testing the handling of illegal or non-standard behaviour the requirement to test
507 against three implementations is relaxed and testing against a single implementation (Test Harness or

- 508 Golden Unit) that exhibits the non-standard behaviour is acceptable. Otherwise the requirement is to
509 test against three implementations.
- 510 • The testing described above will be subject to the same rules and requirements as Specification
511 Validation Events, defined in document 08-0123 Test Event Rules of Engagement.
 - 512 • Once all testing is complete, the specifications for which the testing has been done shall be updated to
513 reflect the change.
 - 514 • In order for a device using a previously non-certifiable feature to become certified, all requirements for
515 certification must be met including successful completion of the entire test plan as described in this
516 policy.
 - 517 • If three separate implementations are not available for testing, the feature cannot be validated. A device
518 implementing that feature may not be certified and the manufacturer has a choice to either:
 - 519 • Wait for the other implementations to become available
 - 520 • Certify the rest of the Product and identify the non-certifiable feature(s) as Manufacturer Specific
521 (i.e., cluster ID, profile ID, command ID, or other Zigbee Alliance approved method)

523

524

4 GOLDEN UNIT

A Golden Unit (GU) is a Compliant Platform or a Certified Product that is designated as reference instantiation of the specification(s) it implements. A GU is a specific combination of hardware, software, firmware and/or errata including revision numbers for each. GUs represent an important infrastructure for Zigbee Certification Programs.

GUs are used to test against Platforms and Products during the testing leading towards certification. Specifically, they are used for:

- Evaluating the expected behavior of the device under test (DUT)
- Testing the DUT for interoperability and conformance to the test specification

When the specification is silent or ambiguous, the behavior of the GUs will be used as the reference for evaluating the expected behavior of the device under test.

GU providers are Zigbee Alliance members and are likely to have been actively involved in creation of the relevant specification and have been actively participating in the interoperability testing series in vendor-neutral environments. This represents a significant commitment by the GU manufacturers.

4.1 Golden Unit Selection

For each release of a specification, the following procedure will be used to establish GUs for that release.

The Zigbee Alliance will announce a specification release interoperability testing series associated with the development of a new standard specification or the revision of an existing one. This interoperability testing series will constitute the GU selection round. During the development process for new (or revised) specifications there are three phases of testing:

Phase 1. Proof of Concept & Interoperability Test Events – These events are held while the test plan is being developed and implemented to proof concepts being considered for inclusion in the specification and to begin testing and validation of early implementations.

Phase 2. Gating Test Events – These events mark the end of the Proof of Concept & Interoperability Test Events. Participation at all prior Gating Test Events is required to continue participating in subsequent Gating Test Events. A variety of Gating Test Events may be scheduled.

Phase 3. Specification Validation Event(s) (SVEs) – This is the final Gating Test Event where participants must test all mandatory features. Attendance at each Gating Test Event is required to participate in the SVE. Participation in a SVE implies a desire to become a Golden Unit.

Upon completion of the three phase testing series, implementations which have successfully completed the series will be eligible for certification provided that all testing requirements have been met at the final SVE.

Participation in the Specification Validation Event does not guarantee being selected as a GU. Implementations become GUs after completing certification and the Director of Zigbee Certified confirms in writing the GU candidate provider's conformance to Section 4.2 Manufacturer Commitments as a Golden Unit Provider.

The Director of Zigbee Certified shall select the GU candidates. The selection will be made from implementations that participated in the SVE with preference given to those that tested against the most implementations.

An additional requirement in becoming a GU provider is that the test service provider provides the GU test logs to Zigbee Alliance which will post them to the document server. The Director of Zigbee Certified will work with the manufacturer in making the test log files anonymous.

570 During the GU selection process, GU candidates will be notified by the Director of Zigbee Certified with
571 regards to any outstanding items required regarding their implementation in order to finalize its certification and
572 complete its selection as a GU. GU candidate providers will be provided with a timeframe by which all
573 outstanding items must be completed by in order for their GU candidacy to remain valid. The timeframe for
574 outstanding item completion will be the same for all GU candidates.

575 Upon the conclusion of the timeframe allowed for completion of outstanding items, the Director of Zigbee
576 Certified will make final GU selections from those candidates that successfully completed all outstanding items.
577 If there is an insufficient number of candidates within the prescribed timeframe, the Director of Zigbee Certified
578 may extend the timeframe, which extension shall be applicable to all GU candidates. For purposes of
579 determining an appropriate number of candidates, the Director of Zigbee Certified will make such determination
580 based on the guidelines set forth in this policy.

581 Once the timeframe has expired (including any extensions), provided there are a sufficient number of GUs
582 selected, the Director of Zigbee Certified will provide written notice to GU candidates that the GU selection
583 process is closed. Any GU candidate who failed to complete its outstanding items by the date of the notice will
584 not be eligible for selection as a GU. The Zigbee Alliance member that proposed such failed GU candidate is
585 eligible to participate in future specification revisions in accordance with the terms and conditions in this policy.

586 GUs must be established and provided to the test service providers before a Certification Program can be open
587 to the Zigbee Alliance general membership. The approved test service providers will then be in a position to
588 commence testing of additional implementations as part of the certification process. A test program may not
589 begin until GUs have been selected and provided to the test service providers.

590 4.2 Manufacturer Commitments as a Golden Unit Provider

591 4.2.1 Requirements for Compliant Platforms Golden Units

592 Manufacturers of GUs used for Compliant Platform testing shall:

- 593 • Implement all mandatory and optional functions;
- 594 • Act as a Zigbee Coordinator, Router and End Device;
- 595 • Support all device operations (*e.g.*, Zigbee Trust Centers, Network Managers, etc.);
- 596 • Allow for negative testing (*i.e.*, be able to produce stimulus that is incorrect, or in error, with
597 respect to the Platform specification) as required by the test specification;
- 598 • Provide a clearly documented interface, including descriptive operational documentation,
599 which enables the running of all test cases and the test specification;
- 600 • Maintain Compliant Platform status for that device, so long as the specification to which that
601 device applies to is in effect, See Section 4.3;
- 602 • Provide technical support to the Zigbee authorized test service providers for its ongoing use as
603 a GU;
- 604 • Provide to each Zigbee authorized test service provider, free of charge, as many units as
605 specified by the Director of Zigbee Certified. The Zigbee authorized test service providers
606 may unpack, power on and test (*e.g.*, smoke test) each of the units prior to confirming to the
607 Director of Zigbee Certified that the units have been delivered; and
- 608 • Make available additional GUs (to Zigbee authorized test service providers) for the purposes
609 of breakage replacement (free of charge) and for additional purchase.

618 **Written Confirmation of the Director of Zigbee Certified Required to Become GU –** Implementations
619 become GUs only after the Director of Zigbee Certified confirms in writing to the applicable manufacturer that
620 such implementation has completed certification, has successfully completed all the items in Sections 4.1 and

621 4.2 and is a GU. No GU applicant may publicize, represent, reference, state or otherwise claim to have a GU or
622 be the manufacturer of a GU except with respect to the specific GU implementation for which the Director of
623 Zigbee Certified has delivered a written confirmation as set forth above.

624 4.3 Updating Golden Units

625 4.3.1 Conditions for Updating Platform Golden Units

626 Updating of the GUs shall be determined by the Director of Zigbee Certified. Circumstances warranting
627 updating a GU include:

- 628 • Approval of Change Control Board comments (CCB) that affect the behavior of the GUs
- 629 • Revision to the specification, test specifications or PICS document that affect the behavior of
- 630 the GUs
- 631 • Errors or bugs are found in the GU
- 632 • A GU is not available anymore (discontinued, etc.)

633 4.3.2 Process of Updating Platform Golden Units

634 If an update is deemed necessary, Zigbee Alliance shall send an official note to the GU manufacturer as well as
635 test service providers detailing the following:

- 636 • Reasons for the need to update
- 637 • Timeline to update
- 638 • All supporting information/documentation to update (example: new specification revision,
639 CCB references, specific bugs to fix, etc.)

640 Once the manufacturer implements the needed changes, the new revision(s) of the GUs need to be revalidated.
641 Revalidation of a Golden Unit requires successful testing completion according to the retest requirements for
642 Compliant Platform as described in Section 7 (Certification by Similarity). To the end of revalidating Golden
643 Units, there are two possibilities:

- 644 • Set a Test Event for the manufacturers and test service providers to attend and verify the
645 changes. This Test Event shall be only open to those GU manufacturers and the test service
646 providers. At least one test service provider shall attend that event.
- 647 • Send the new revision(s) of the GUs to all test service providers who will then test them
648 internally and submit the results to Zigbee Alliance.

650 If the result of the testing is considered a pass the new revisions will then be officially accepted as the new GUs
651 and the official list of GUs pertaining to that specification must be modified to reflect the changes.

652 The manufacturers shall then send the new GUs to all test service providers (in case of a firmware upgrade,
653 sending the revised firmware would be sufficient as long as test service providers have the tools to upgrade the
654 firmware on their units). At that point, the new GUs shall replace the old ones in official testing at the test
655 service providers.

656 Note that in case that new hardware is needed, the number of GUs to be sent to test service providers shall be
657 determined by the Director of Zigbee Certified.

658 If a GU manufacturer cannot update their units within the timeline specified by the Director of Zigbee Certified,
659 the Director of Zigbee Certified can then decide to make a new request for a GU to replace that specific
660 Platform/device.

661 Any Golden Unit going through the revalidation process, shall be removed from the active rosters of Golden
662 Units until the revalidation process is successfully completed and all necessary updates (HW and/or SW) have
663 been completed at all test service providers and shall not be used in the testing of units for the applicable
664 Standard.

665 5 MODIFICATIONS AND REVISIONS

666 This Section described the process and requirements for certification when a Product has already been certified.

667 5.1 Modification of Products

668 Certification is awarded to particular version of a Product. Any modification to that Product will result in a new
669 version and that version may not claim certification without going through the Zigbee Certified program.

670 The new version of the Product may not require testing in order to be certified. Changes that affect conformance
671 to the Standard (hardware, firmware or software changes) will usually require testing. The Alliance maintains
672 requirements for testing of changes to Products. For complete information, See Section 7 (Certification by
673 Similarity).

674 The original version of the Product retains certification for the life of the Product, unless revoked by action of
675 the Alliance.

676 5.2 Revisions to Specifications

677 In the interests of continuous improvement in the quality of the compliance program, Zigbee Alliance may, from
678 time to time, change the compliance testing procedures through a change to a test plan. Because a Product's
679 certification is good for the life of the Product, there will be no requirements for manufacturers to go through
680 certification again. However, Zigbee Alliance encourages manufacturers to resubmit their devices to test service
681 providers for verification of compliance to those changes.

682 The Zigbee Alliance will maintain records sufficient to identify the version of a test plan under which certified
683 Products were tested.

684 5.2.1 Grace Period for Testing

685 When a test plan or specification is revised, Zigbee Alliance will declare a grace period during which
686 manufacturers in their development cycles can still certify to an old test plan and specification. However, after
687 the grace period is over, all devices going through certification must be tested against latest test plan and
688 specification.

689 The work group creating the Standard will recommend a grace period for revisions affecting Products to be
690 approved by the appropriate Technical Sub-Committee, the Marketing work group and the Board Stratcom
691 when the specification has reached 1.0 status. This grace period will be based on the amount of changes
692 introduced by the new specification and the current state of deployment of devices based on the previous version
693 of the specification or similar considerations. The default grace period if the work group does not recommend a
694 change is 6 months.

695 5.2.2 Major Revisions Affecting Interoperability

696 In exceptional circumstances, Zigbee Alliance reserves the right to mandate resubmission of Compliant
697 Platforms for testing against a revised Compliant Platform test plan. This may occur, for instance, where a
698 serious deficiency in the test plan or process is uncovered, leading to Platform interoperability issues. In the
699 event that the Alliance mandates such resubmission and the manufacturer fails to successfully complete such
700 testing within the time specified by the Director of Zigbee Certified, the Alliance may move to revoke
701 certification of the Compliant Platform.

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705 6 CERTIFICATION PROGRAMS

706 This Section describes existing Certification Programs, in terms of requirements and additions to the common
707 process. Except where noted, each Product or Compliant Platform Certification Program uses the common rules
708 and process described in the previous Sections. When there is a choice of options (i.e. Golden Units or no
709 Golden Units), or dependencies (e.g. Platform vs. Product) then this is described here.

710 6.1 Zigbee PRO Stack

711 The Zigbee PRO Stack may be used under a number of Standards. Each Standard specifies the Stack revisions
712 that it requires, or at least the minimum required.

713 6.1.1 Zigbee PRO Compliant Platform Certification Program

714 The Platform implementation SHALL conform to these Stack specifications as appropriate to the declared
715 PICS:

- 716 • 802.15.4 2011 or later as required by the Zigbee PRO specification
- 717 • Zigbee PRO specification
- 718 • Zigbee Green Power Proxy Basic and all other Zigbee Green Power components remain as optional
719 features of the Zigbee PRO specification.
 - 720 ○ Any Platform which implements any of the Zigbee Green Power features (including Proxy
721 Basic) will be subject to ALL applicable testing.
 - 722 ○ Upon successful completion of the certification process, Platforms implementing any Zigbee
723 Green Power feature will be identified as such in the Compliant Platform listing on the
724 Alliance's public website.

725 The program SHALL be defined by the following Sections, and specific Sections that pertain to a Compliant
726 Platform (not a Product):

- 727 1) Section 2 Zigbee Certified Program
- 728 2) Section 3 Testing
 - 729 a. Including Section 3.3.2 Test House Test Harness, but not 3.3.1 Zigbee Alliance Test Harness
- 730 3) Section 4 Golden Unit
- 731 4) Section 5.2 Revisions to Specifications
 - 732 a. The grace period SHALL be recommended by the work group as part of the 1.0 approval.

734 6.1.2 Legacy Profile Product Certification Program

735 A legacy Profile Standard is built upon the Zigbee PRO Stack. A Product implementation SHALL be built upon
736 a Zigbee PRO Compliant Platform and conform to the Zigbee PRO Stack specification revision as required by
737 the Profile Standard:

738 The Product implementation SHALL conform to these Standard specifications as appropriate to the declared
739 PICS:

- 740 • Zigbee Cluster Library
- 741 • A legacy Profile Standard, such as ZHA, ZSE, ZLL, ZBA, etc.

742 The program SHALL be defined by the following Sections that pertain to a Certified Product (not a Platform):

- 743 5) Section 2 Zigbee Certified Program
- 744 6) Section 3 Testing
 - 745 a. Including Section 3.3.2 Test House Test Harness, but not 3.3.1 Zigbee Alliance Test Harness
- 746 7) Section 4 Golden Unit
- 747 8) Section 5.2 Revisions to Specifications
 - 748 a. The grace period SHALL be recommended by the work group as part of the 1.0 approval.

749 Note: After the grace period following the release of Zigbee 3.0 Standard, there will only be a Legacy Profile
750 Product Certification Program for Zigbee Smart Energy (ZSE).

751 6.1.3 Zigbee 3.0 Product Certification Program

752 The Zigbee 3.0 Standard is built upon the Zigbee PRO Stack. A Product implementation SHALL be built upon a
753 Zigbee PRO Compliant Platform and conform to the Zigbee PRO Stack revision as required by the Zigbee 3.0
754 Standard:

755 The Product implementation SHALL conform to these Standard specifications as appropriate to the declared
756 PICS:

- 757 • Application Architecture
- 758 • Base Device Behavior specification
- 759 • Green Power specification requirements for a Zigbee Router (Green Power Basic Proxy)
 - 760 a. Zigbee Green Power Proxy Basic is a mandatory feature for all Zigbee 3.0 routing capable
761 devices. However,
 - 762 i. If the Zigbee 3.0 routing capable Product was built using a Zigbee Pro Compliant
763 Platform which implements (and was properly certified for) the Zigbee Green Power
764 Proxy Basic feature and it has not been modified, the Zigbee 3 Product will only be
765 subject to a SINGLE Zigbee Green Power Proxy Basic test case as follows:
 - 766 1. Test Case 5.3.1.4 if the Compliant Platform used was certified before
767 August 1, 2017
 - 768 2. Test Case 5.4.1.23 if the Compliant Platform used was certified on or after
769 August 1, 2017
 - 770 ii. If the Zigbee 3 routing capable Product was built on a Zigbee PRO Compliant
771 Platforms which DOES NOT implement the Zigbee Green Power Proxy Basic
772 feature or HAS NOT been properly certified for it (or it has been modified), then the
773 Product is subject to ALL applicable Zigbee Green Power Proxy Basic test cases.
 - 774 • Zigbee Cluster Library
 - 775 • One or more application device specifications

776 The program SHALL be defined by the following Sections that pertain to a Certified Product (not a Platform):

- 777 9) Section 2 Zigbee Certified Program
- 778 10) Section 3 Testing
 - 779 a. Including Section 3.3.1 Zigbee Alliance Test Harness, but not 3.3.2 Test House Test Harness
- 780 11) Section 5.2 Revisions to Specifications
 - 781 a. The grace period SHALL be recommended by the work group as part of the 1.0 approval.

782 6.2 Green Power Device Stack

783 The Green Power Device Stack supports a single Green Power Device Standard. There is no Complaint
784 Platform Program.

785 6.2.1 Green Power Device Product Certification Program

786 The Product implementation SHALL conform to these Standard specifications as appropriate to the declared
787 PICS:

- 788 • 802.15.4 2011 or later as required by the Green Power specification
- 789 • Green Power specification requirements for a Green Power Device

790 The program SHALL be defined by the following Sections that pertain to a Certified Product (not a Platform):

- 791 12) Section 2 Zigbee Certified Program

- 792 13) Section 3 Testing
793 a. Including Section 3.3.1 Zigbee Alliance Test Harness, but not 3.3.2 Test House Test Harness
794 14) Section 5.2 Revisions to Specifications
795 a. The grace period SHALL be recommended by the work group as part of the 1.0 approval.

796 **6.3 RF4CE Stack**

797 The RF4CE Stack supports a single Remote Control Standard.

798 **6.3.1 RF4CE Compliant Platform Program**

799 The Platform implementation SHALL conform to these Stack specifications as appropriate to the declared
800 PICS:

- 801 • 802.15.4 2006 or later as specified by RF4CE specification
802 • RF4CE specification

803 **6.3.2 Remote Control Product Certification Program**

804 The Remote Control Standard is built upon the RF4CE Stack. A Product implementation SHALL be built upon
805 a Zigbee RF4CE Compliant Platform and conform to the RF4CE Standard revision as required by the Remote
806 Control Standard.

807 The Product implementation SHALL conform to the Standard specifications as appropriate to the declared
808 PICS:

- 809 • ZRC specification

810 The program SHALL be defined by the following Sections that pertain to a Certified Product (not a Platform):

- 811 15) Section 2 Zigbee Certified Program
812 16) Section 3 Testing
813 a. Including Section 3.3.2 Test House Test Harness, but not 3.3.1 Zigbee Alliance Test Harness
814 17) Section 4 Golden Unit
815 18) Section 5.2 Revisions to Specifications
816 a. The grace period SHALL be recommended by the work group as part of 1.0 approval.

817

818 7 CERTIFICATION BY SIMILARITY

819 The Zigbee Alliance offers a Certification by Similarity program to member companies. The Certification by
820 Similarity (CbS) program allows a Zigbee Product that is derived from a previously tested and certified Zigbee
821 Product to be granted certification based on its similarity to a previously tested certified Product. The purpose
822 of the CbS program is to speed time-to-market and to minimize certification costs. It is not intended to
823 eliminate the requirement that a Product actually passes Zigbee compliance tests.

824 7.1 Policy

825 The only authority to grant Certification by Similarity to a Product is Zigbee Alliance. No test service provider
826 or any other entity is authorized to grant or pursue Certification by Similarity requests on behalf of Zigbee
827 Alliance.

828 The new Product must be derived from and be substantially similar to a Zigbee certified Product that has
829 successfully undergone full and complete compliance testing. CbS addresses changes such as color, enclosures,
830 language, etc. that do not affect the conformance of the Product to Zigbee Standards. The new Product cannot be
831 compared to another Product that itself has been granted Certification by Similarity without additional testing
832 having been performed. More details on the guidelines that govern the CbS, and thus the need (or lack of) for
833 testing, can be found in [Section 8.6](#) of this document.

834 If the original certified Product on which the Certification by Similarity is based is older than three years, then
835 complete testing is required of the new Product.

836 CbS does not waive or change the requirement for certifiers of Products to be members of the Alliance, to
837 follow the Zigbee Alliance Trademark and Logo Usage Guidelines and Terms, or to comply with any policies of
838 Zigbee Alliance.

839 7.2 Certification by Similarity Guidelines

840 When Products are very similar, testing of one Product may allow the other similar Products to be added to the
841 Integrators List (Approved List) without re-testing. Furthermore, some changes to certain Products may be
842 deemed harmless to the existing certification for that specific Product, in which case the newer revision will
843 automatically be certified by similarity.

844 The decision on whether or not a Product will qualify for Certification by Similarity (CbS) will be the
845 responsibility of Zigbee's Certification body according to the procedure highlighted above. The ultimate
846 responsibility for making sure that all Product variations and models are certified (whether through actual
847 certification and/or via CbS), ultimately lies with each manufacturer.

848 Audits by Zigbee Alliance that reveal discrepancies between shipping Product and samples tested may be cause
849 for required re-test, revocation of certification, and/or legal action. Only Zigbee Alliance members have the
850 right to use the Zigbee Alliance trademarks and logo, and such usage is subject to the Zigbee Alliance
851 Trademark and Logo Usage Guidelines and Terms.

852 7.3 Certification by Similarity Guidelines Procedure

- 853 19) An applicant (Product developer) submits a Testing Exemption Request Form (found below) at
certification@zigbee.org in lieu of testing.
- 854 20) When applicable, Zigbee Alliance will obtain specification sheets/drawings of both the originally
certified and new Products.
- 855 21) A review of the Testing Exemption Request Form and specification sheets/drawings will be performed
by the Director of Zigbee Certified. One or more of the authorized test service providers and/or other
experts (e.g. Zigbee Alliance Expert Review Panel) may be consulted by Zigbee Alliance, keeping in
mind the confidential sensitivities that come with an unreleased Product.
- 856 22) The Zigbee Alliance will issue its assessment to the applicant within one (1) calendar week. One of
two outcomes is possible:

- 863 23) Certification by Similarity is granted. The applicant must complete a standard application for
864 certification in the www.zigbee.org Member's Area and the Alliance will process the application as
865 any other certification.
866 24) Certification by Similarity is denied. The Product is required to go through testing at one of the
867 authorized test service providers.

868 When testing is required the Product developer will follow standard procedures for testing and certification.

869 7.4 Guidelines for "Retest"

870 The guidelines for retests can be found in Section 8.6 of this document.

871 If you think retest is not required, your company can submit a Testing Exemption Request Form (provided
872 below) for consideration by Zigbee Alliance.

873 7.5 Testing Exemption Request Form

874 Companies must submit a Testing Exemption Request Form to certification@zigbee.org for their
875 Product/Platform/HW to be considered to be exempt from a spot check or full testing.

876 The form can be found in Section 8 (Testing Exemption Request Form).

877 7.6 Retest Requirements for Compliant Platform Certification

878 7.6.1 Retest not required

879 I/O additions on the dev board

880 7.6.2 Full retest required

881 Bug fixes that substantively affect the Platform functionality require a full retest.

882 7.6.3 Spot check required

883 A spot check tests specific areas affected plus random spot check of other areas against Golden Units.

- 884 • Porting of the Stack (with no changes) to a new hardware
885 • Bug fixes that do not substantively affect the functionality
886 • Update to the Stack (including non-Zigbee related code update)
887 • Microcontroller change (with the PHY/MAC staying the same)
888 • Addition of a new feature/module to the Zigbee firmware

889 7.6.4 IEEE 802.15.4 retesting required

890 See Retest requirements for 802.15.4 compliant radios

891 7.7 Retest Requirements for Certified Products

892 7.7.1 Retest not required

- 893 • Product packaging changes (color, shape, etc.)
894 • Changes in interface that do not affect Zigbee or Radio functionality (color display v/s B&W, push
895 button light switch v/s paddle switch, etc.)

- 896 • HW configuration changes that do not affect ZB (changing location of a read switch, change of
897 metrology, change of button location, etc)

898 **7.7.2 Full retest required**

- 899 • Addition/exposure of a new feature and/or cluster to the Zigbee firmware
900 • HW, SW or FW changes for the device(s) that the Stack and app are running on (with the exception of
901 those items called out above in Retest not required)
902 • Layout change of the module used

903 **7.7.3 Spot check required**

904 Note: Considering that the level of effort and price to certify Products are relatively small, it would be cheaper
905 and faster to retest fully if needed than deal with the procedures and maintenance of spot check requests and
906 upkeep.

907 **7.7.4 IEEE 802.15.4 retesting required**

908 See 7.8 Retest Requirements for 802.15.4 Compliant Radios

909 Note: The exact nature of the IEEE 802.15.4 retesting needs to be defined. As part of regulatory Radio testing,
910 Products have to be supplied with a number of test modes. It is intended that the IEEE 802.15.4 retesting would
911 only use these existing test modes (to reduce the development burden on the Product manufacturer)

912 **7.8 Retest Requirements for 802.15.4 Compliant Radios**

913 **7.8.1 Full retest required**

- 914 • Change in Radio IC
915 • Changes in SW, FW affecting Radio functionality
916 • Changes requiring retest by regulatory authorities

917 **7.8.2 Spot check required**

- 918 • Change/Addition of a PA (All Tx tests shall be run, Rx tests shall be spot checked)
919 • Change/Addition of LNA (All Rx tests shall be run, Tx tests shall be spot checked)
920 • Change of all other components connected externally to the Radio IC
921 • Change in RF/EMI/EMR enclosures
922 • Change in packaging affecting RF/EMI/EMR characteristics
923 • Change in board layout

924 **7.8.3 Retest not required**

925 Change in I/O interface to the board

926 **7.8.4 Spot check rules (Firmware/Platform)**

- 927 • Full retest of functionality that has been changed or where bugs were fixed
928 • Full coverage of the all the other areas through spot check (one test case per function)
929 • In case of any failure on the spot check areas, the Product is considered as a fail and a full retest is
930 needed

931 7.8.5 Spot check rules (PHY)

- 932 • Full test (all test cases) of the first and last channel in the band
933 (Channel 11 and 26 for 2.4GHz)
934 • Spot check for the rest of the channels (2 channels per test case)
935 • In case of any failure during the spot check, the Product is considered as a fail and a full retest is
936 needed

8 CERTIFICATION TRANSFER PROGRAM

The Zigbee Alliance certification transfer program supports the use of a previously Certified Product from a Participant or Promoter member company as part of a new Product (from a member company). Participation in the Zigbee Alliance certification transfer program is subject to the terms and conditions of the Zigbee Alliance Certification Transfer Program Agreement.

8.1 Certification Transfer Program details

The Zigbee Alliance certification transfer program supports the embedding of a previously Certified Product (from a Participant or Promoter member company) into a new Product enclosure from any member company. The previously Certified Product SHALL NOT be changed from its certified configuration (Read: No **hardware** changes other than a new Product enclosure and no **software** changes.) The only permitted **firmware** changes SHALL relate to manufacturer and device specific descriptions. The manufacturer of the previously Certified Product, registered for the Certification Transfer Program, MUST make provision to configure the manufacturer and device specific data without modifying (incl. recompiling) the firmware.

The originally Certified Product implementation SHALL conform to the following Standard specifications as appropriate to the declared PICS:

- Zigbee 3.0 Specification & requirements as defined in Section [6.1.3](#)
- Zigbee Smart Energy Specification & requirements as defined in Section [6.1.2](#)
- Green Power end devices as defined in Section 6.2.1.

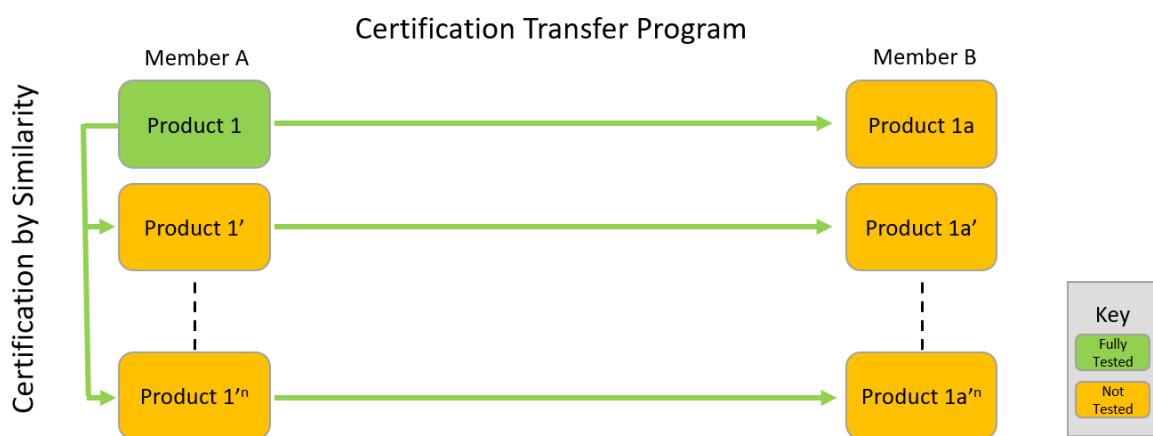
The original Certified Product implementation SHALL have obtained its certification by one of the following methods:

- Full testing in accordance with Section 2
- Certification by Similarity as per Section 7.7

Products certified under this program SHALL conform with all additional requirements below:

- Certifying Product SHALL seek certification under the same program, device type and device capabilities as the originally Certified Product.
 - Availability of certification is subject to the same timelines and grace period as the original programs.
- Certifying companies shall submit a Certification Transfer Application via the Alliance web tool, agree to the Zigbee Alliance Certification Transfer Program Agreement and remit all appropriate fees as designated by the Zigbee Alliance Board of Directors.

8.2 Graphical Representation of the Permitted Certifications



970 9 TESTING EXEMPTION REQUEST FORM

Product Developer Information	
Company Name:	
Contact Name: (First, Last)	
Contact Email:	
Work Phone:	
Original Certified Product Information	
Product Name	
Software Revision:	
Hardware Revision:	
Zigbee Certificate ID	
Product Submitted for Testing Exemption	
Product Name	
Zigbee Specification(s) Rev. #(s) and any Errata at Time of Request	
Software Revision:	
Hardware Revision: Note: Revision number is the number used to distinguish this specific build of the Product from a subsequent or prior one.	

Detailed Differences:	
Note: Please explain in detail the differences between the Product currently on the Integrators List / Approved List and the item you are submitting for certification by similarity. (Please do not use terms that only your company or your specific industry understands.)	
Has the schematic changed?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
If YES, Please Explain:	
Have any components changed (including RF hardware):	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
If YES, Please Explain:	

Has the Zigbee Component Enclosure Changed? (Structural, Material or Density)	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
If YES, Please Explain:	
Does the change expose new functionality?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
If YES, Please Explain:	
Has the firmware changed?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
If YES, Please Explain:	

Has the Product driver changed (if applicable)?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
If YES, Please Explain:	

971

972

973 Signature: _____

974

975 Name (Print): _____

976

977 Date: _____

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