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# **ZIGBEE ALLIANCE CERTIFICATION POLICY**

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# 1 INTRODUCTION

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

- The Zigbee Certified Program
- Types of certification
- Levels of certification
- Certification Programs
- Testing programs and authorized test service providers
- Golden Units and processes for selection and revision
- Certification by similarity and guidelines for retesting

## 1.1 Scope and Purpose

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

## 1.2 Structure of this Document

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

## 1.3 References

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

- 13-0625 Technical Structure, Process and Procedures
- 08-0123 Test Event Rules of Engagement
- 05-3739 Zigbee Certified Logo and Trademark Policy
- 08-5185 Qualification and Validation of Test Service Providers
- 11-5456 Master Cluster List

## 1.4 Abbreviations and Terminology

*Table 1 – Abbreviations and Terminology*

<b>Certification Program</b>	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
<b>Certified Product</b>	A Product that has been certified under the Product Certification Program
<b>Compliant Platform</b>	A Platform that has been certified under the Compliant Platform Certification Program
<b>Compliant Platform Certification Program</b>	A Certification Program that validates a Platform for purposes of certification
<b>DUT</b>	Device Under Test

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

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## 142 2 ZIGBEE CERTIFIED PROGRAM

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

### 144 2.1 Description

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

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

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

## 159 2.2 Testing Versus Certification

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

164 Only Zigbee Alliance may grant certification.

## 165 2.3 Zigbee Responsibilities

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

## 170 2.4 Director of Zigbee Certified

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

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

## 177 2.5 Expert Review Panel

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

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

## 187 2.6 Appeals

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

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

### 192 2.6.1 Appeals Process

193 The process for appeals shall be:



- 194 • Applicant shall send an appeal request to certification@zigbee.org. The request shall  
195 document the issue, the specific basis of the appeal and the corrective action requested.  
196
- 197 • Acknowledgement of receipt of the appeal by either the Director of Zigbee Certified or the  
198 President and Chief Executive Officer of Zigbee Alliance shall be provided.  
199
- 200 • The Director of Zigbee Certified and the President and Chief Executive Officer of Zigbee  
201 Alliance shall consider the appeal.  
202
- 203 • A preliminary decision shall be made either to have Zigbee Alliance take corrective action or  
204 to reject the appeal.  
205
- 206 • If corrective action by Zigbee Alliance is to be taken, the Director of Zigbee Certified or the  
207 President and Chief Executive Officer of Zigbee Alliance shall implement the corrective  
208 action.  
209
- 210 • If the appeal is proposed for rejection, the appeal shall be forwarded to the Appeals  
211 Committee for consideration.  
212
- 213 • A report on the status of the appeal shall be given to the applicant.  
214
- 215 • The Appeals Committee shall consider the appeal.  
216
- 217 • A decision shall be made either to have Zigbee Alliance take corrective action or to reject the  
218 appeal.  
219
- 220 • If corrective action by Zigbee Alliance is to be taken, the Director of Zigbee Certified or the  
221 President and Chief Executive Officer of the Zigbee Alliance shall implement the corrective  
222 action.  
223
- 224 • If the appeal is rejected, the specific basis for rejection shall be documented.  
225
- 226 • A report on the final disposition of the appeal shall be given to the applicant by either the  
227 Director of Zigbee Certified or the President and Chief Executive Officer of Zigbee Alliance.

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

## 229 2.6.2 Appeals Committee

230 The Zigbee Alliance shall have a committee to address appeals. The Appeals Committee shall consist of the  
231 Chief Executive Officer of the Alliance, the chairperson of the TCOC and a representative of each authorized  
232 test service provider. The Chief Executive Officer of the Alliance shall act as chairperson of the Appeals  
233 Committee.

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

## 239 2.7 Levels of Certification

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

### 241 2.7.1 Compliant Platform

242 The Zigbee Compliant Platform program defines a rigorous evaluation and certification process for a Platform  
243 before it can be certified as a Compliant Platform and engineered into a Product. Each Platform is comprised of

244 a radio and a microprocessor with storage running Zigbee firmware. The Platform is tested for compliance to a  
245 set of Zigbee specifications (See Section 6 (Certification Programs)).

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

## 249 2.7.2 Certified Product

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

## 257 2.8 Requirements for Certification

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

### 260 2.8.1 Membership

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

### 264 2.8.2 Conformance to Standard

265 Conformance is verified by testing performed by an authorized test service provider and demonstrated by a test  
266 report documenting successful completion of the entire test plan including all test cases for mandatory features  
267 and test cases for any implemented optional features as identified by the PICS. The test service providers shall  
268 report any information relevant regarding the Product's conformance to a Standard in the test report.

### 269 2.8.3 Documentation of Product

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

- 272 1) Declaration of Conformity (DoC or DOC):
  - 273 a) Version numbers of Product hardware, software, and firmware
  - 274 b) For a Product, a Stock Keeping Unit (SKU) and/or Universal Product Code
  - 275 c) For a Product, the Compliant Platform upon which the Product is based
  - 276 d) Signature of a representative of the Product manufacturer
  - 277 e) Signature of a representative of the authorized test service provider performing Product testing
  - 278
- 279 2) Protocol Implementation Conformance Statements (PICS):
  - 280 a) including mandatory and optional features supported by the Product
  - 281
- 282 3) Non-declaratory information that is also requested:
  - 283 a) Product description
  - 284 b) Product photo

## 285 2.9 Process for Certification

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

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

298 **Reporting:** Test service providers will submit test results directly to the Alliance.  
299

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

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

- 307 • Submission of all required documentation
  - 308 • Membership in the Alliance
  - 309 • Completion of testing
  - 310 • Payment of applicable fees
- 311

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

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

## 316 2.10 Certificates

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

## 319 2.11 Logo Usage

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

322 Use of any Zigbee Alliance trademarks and logos, including for labelling Products as certified by Zigbee  
323 Alliance is limited to Zigbee members and is subject to the Zigbee Alliance Trademark and Logo Usage  
324 Guidelines and Terms available at [www.zigbee.org](http://www.zigbee.org).

## 325 2.12 Length of Certification

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

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

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

## 332 2.13 Revocation of Certification

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

- 335 • A Product is found to be hazardous as defined in ISO Guide 27-1983.  
336
- 337 • The manufacturer has made any material misstatement of fact, or omission of fact, to the  
338 Alliance or its authorized test service providers.  
339
- 340 • The manufacturer fails to follow all Alliance certification requirements.  
341
- 342 • The manufacturer fails to use Zigbee Alliance trademarks and logos in accordance with the  
343 Zigbee Alliance Trademark and Logo Usage Guidelines and Terms available at  
344 [www.zigbee.org](http://www.zigbee.org). Examples of failure to use in accordance with the Zigbee Alliance  
345 Trademark and Logo Usage Guidelines and Terms include (but are not limited to)  
346 misapplying logos/icons, and using logos with Products that have not been certified.  
347
- 348 • The manufacturer has engaged in any form of misconduct which compromises the integrity of  
349 Zigbee Alliance or the Zigbee Certified program.  
350
- 351 • The manufacturer leaves Zigbee Alliance and continues using logos, trademarks or any other  
352 Zigbee Alliance branding.  
353
- 354 • The member is in violation of the member agreement, other agreement with Zigbee Alliance,  
355 or a Zigbee Alliance policy or procedure.

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

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

## 362 2.14 Testing and Certification Fees

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

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

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

# 367 3 TESTING

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

## 371 3.1 Test Plans

372 The test plan must, at a minimum, cover all PICS related items. This must be confirmed by means of a PICS-to-  
373 Test-Case mapping. The test plan will undergo standard approval as part of the process detailed in Policies &  
374 Procedures (document 13-0625) before formal release. In order to be finalized, and approved, a test plan must  
375 undergo validation at a Specification Validation Event (SVE). More details regarding the SVE can be found in

376 document 08-123 Test Event Rules of Engagement. Features that are certifiable are listed in document 11-5456  
377 Master Cluster List.

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

## 380 3.2 Authorized Test Service Providers

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

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

## 386 3.3 Test Harness

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

### 390 3.3.1 Zigbee Alliance Test Harness

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

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

### 397 3.3.2 Test House Test Harness

398 Where there is no applicable Zigbee Alliance Test Harness available for a given Certification Program,  
399 Authorized Test Service Providers may (at their own discretion) create Test Harnesses (or other test tools) for  
400 the execution of the testing procedures associated with the given program. The Zigbee Alliance shall have  
401 access to these Authorized Test Service Provider developed testing tool(s) for the sole purpose of auditing the  
402 service provider's conformance to the test validation procedures (See document 08-5185).

## 403 3.4 Requirements for Testing

### 404 3.4.1 Compliant Platform Testing

405 The guidelines for Compliant Platform testing are as follows:

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

415

### 416 3.4.2 Certified Product Testing

417 The guidelines for Certified Product testing are:

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

### 424 3.4.3 Testing Samples

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

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

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

## 436 3.5 Reporting of Test Results

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

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

- 442 • Test Information: Location and dates of testing, any tracking or other information necessary to  
443 trace results such as test project numbers, responsible testing engineer,  
444
- 445 • Tested Device: Company, address, contact information, Product name, hardware and software  
446 Product versions, serial number, Zigbee device type, and other information necessary to  
447 identify the device,  
448
- 449 • Type of Test: Compliant Platform, or Certified Product,  
450
- 451 • Standards: Name and version information,  
452
- 453 • Test Plan: documentation of Test Plan and version numbers used or a list of test cases if a  
454 complete test plan is not used,  
455
- 456 • Test Equipment: Documentation of any equipment used in the test including Test Harness,  
457 script, sniffers, GUs, and other information necessary to identify the testing equipment  
458 including version information,  
459
- 460 • Test Results: List of individual tests conducted with individual test results,

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- Test Results Summary: Overall Pass / Fail,
  - Test Results Observations: Observations outside the scope of the test cases, and
  - Signatures: Test engineer, any reviewer or quality engineers.

### 467 3.6 Certification by Similarity

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

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

### 473 3.7 Testing Events

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

### 475 3.8 Features Not Previously Certified

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

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

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- One of the implementations, but no more than one, may be a Test Harness from an authorized test service provider.
  - A “separate implementation” is defined as an implementation developed independently from other implementations by a different member of Zigbee Alliance.
  - When a test case is testing the handling of illegal or non-standard behaviour the requirement to test against three implementations is relaxed and testing against a single implementation (Test Harness or Golden Unit) that exhibits the non-standard behaviour is acceptable. Otherwise the requirement is to test against three implementations.
  - The testing described above will be subject to the same rules and requirements as Specification Validation Events, defined in document 08-0123 Test Event Rules of Engagement.
  - Once all testing is complete, the specifications for which the testing has been done shall be updated to reflect the change.
  - In order for a device using a previously non-certifiable feature to become certified, all requirements for certification must be met including successful completion of the entire test plan as described in this policy.
  - If three separate implementations are not available for testing, the feature cannot be validated. A device implementing that feature may not be certified and the manufacturer has a choice to either:
    - Wait for the other implementations to become available
    - Certify the rest of the Product and identify the non-certifiable feature(s) as Manufacturer Specific (i.e., cluster ID, profile ID , command ID, or other Zigbee Alliance approved method)

504

## 505 4 GOLDEN UNIT

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

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

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

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

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

### 519 4.1 Golden Unit Selection

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

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

- 525 Phase 1. Proof of Concept & Interoperability Test Events – These events are held while the test  
526 plan is being developed and implemented to proof concepts being considered for  
527 inclusion in the specification and to begin testing and validation of early  
528 implementations.
- 529 Phase 2. Gating Test Events – These events mark the end of the Proof of Concept &  
530 Interoperability Test Events. Participation at all prior Gating Test Events is required to  
531 continue participating in subsequent Gating Test Events. A variety of Gating Test  
532 Events may be scheduled.
- 533 Phase 3. Specification Validation Event(s) (SVEs) – This is the final Gating Test Event where  
534 participants must test all mandatory features. Attendance at each Gating Test Event is  
535 required to participate in the SVE. Participation in a SVE implies a desire to become a  
536 Golden Unit.

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

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

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

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



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

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

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

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

## 570 4.2 Manufacturer Commitments as a Golden Unit Provider

### 571 4.2.1 Requirements for Compliant Platforms Golden Units

572 Manufacturers of GUs used for Compliant Platform testing shall:

- 573 • Implement all mandatory and optional functions;  
574
- 575 • Act as a Zigbee Coordinator, Router and End Device;  
576
- 577 • Support all device operations (*e.g.*, Zigbee Trust Centers, Network Managers, etc.);  
578
- 579 • Allow for negative testing (*i.e.*, be able to produce stimulus that is incorrect, or in error, with  
580 respect to the Platform specification) as required by the test specification;  
581
- 582 • Provide a clearly documented interface, including descriptive operational documentation,  
583 which enables the running of all test cases and the test specification;  
584
- 585 • Maintain Compliant Platform status for that device, so long as the specification to which that  
586 device applies to is in effect, See Section 4.3;  
587
- 588 • Provide technical support to the Zigbee authorized test service providers for its ongoing use as  
589 a GU;  
590
- 591 • Provide to each Zigbee authorized test service provider, free of charge, as many units as  
592 specified by the Director of Zigbee Certified . The Zigbee authorized test service providers  
593 may unpack, power on and test (*e.g.*, smoke test) each of the units prior to confirming to the  
594 Director of Zigbee Certified that the units have been delivered; and  
595
- 596 • Make available additional GUs (to Zigbee authorized test service providers) for the purposes  
597 of breakage replacement (free of charge) and for additional purchase.

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

601 4.2 and is a GU. No GU applicant may publicize, represent, reference, state or otherwise claim to have a GU or  
602 be the manufacturer of a GU except with respect to the specific GU implementation for which the Director of  
603 Zigbee Certified has delivered a written confirmation as set forth above.

## 604 4.3 Updating Golden Units

### 605 4.3.1 Conditions for Updating Platform Golden Units

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

- 608 • Approval of Change Control Board comments (CCB) that affect the behavior of the GUs
- 609 • Revision to the specification, test specifications or PICS document that affect the behavior of  
610 the GUs
- 611 • Errors or bugs are found in the GU
- 612 • A GUs is not available anymore (discontinued, etc.)

### 613 4.3.2 Process of Updating Platform Golden Units

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

- 616 • Reasons for the need to update
- 617 • Timeline to update
- 618 • All supporting information/documentation to update (example: new specification revision,  
619 CCB references, specific bugs to fix, etc.)

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

- 624 • Set a Test Event for the manufacturers and test service providers to attend and verify the  
625 changes. This Test Event shall be only open to those GU manufacturers and the test service  
626 providers. At least one test service provider shall attend that event.
- 627
- 628 • Send the new revision(s) of the GUs to all test service providers who will then test them  
629 internally and submit the results to Zigbee Alliance.

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

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

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

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

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

## 645 5 MODIFICATIONS AND REVISIONS

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

### 647 5.1 Modification of Products

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

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

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

### 656 5.2 Revisions to Specifications

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

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

#### 664 5.2.1 Grace Period for Testing

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

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

#### 675 5.2.2 Major Revisions Affecting Interoperability

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

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## 685 6 CERTIFICATION PROGRAMS

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

### 690 6.1 Zigbee PRO Stack

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

#### 693 6.1.1 Zigbee PRO Compliant Platform Certification Program

694 The Platform implementation SHALL conform to these Stack specifications as appropriate to the declared  
 695 PICS:

- 696 • 802.15.4 2011 or later as required by the Zigbee PRO specification
- 697 • Zigbee PRO specification
- 698 • Zigbee Green Power Proxy Basic and all other Zigbee Green Power components remain as optional  
 699 features of the Zigbee PRO specification.
  - 700 ○ Any Platform which implements any of the Zigbee Green Power features (including Proxy  
 701 Basic) will be subject to ALL applicable testing.
  - 702 ○ Upon successful completion of the certification process, Platforms implementing any Zigbee  
 703 Green Power feature will be identified as such in the Compliant Platform listing on the  
 704 Alliance's public website.

705  
 706 The program SHALL be defined by the following Sections, and specific Sections that pertain to a Compliant  
 707 Platform (not a Product):

- 708 1) Section 2 Zigbee Certified Program
- 709 2) Section 3 Testing
  - 710 a. Including Section 3.3.2 Test House Test Harness, but not 3.3.1 Zigbee Alliance Test Harness
- 711 3) Section 4 Golden Unit
- 712 4) Section 5.2 Revisions to Specifications
  - 713 a. The grace period SHALL be recommended by the work group as part of the 1.0 approval.

#### 714 6.1.2 Legacy Profile Product Certification Program

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

718 The Product implementation SHALL conform to these Standard specifications as appropriate to the declared  
 719 PICS:

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

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

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

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

### 731 6.1.3 Zigbee 3.0 Product Certification Program

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

735 The Product implementation SHALL conform to these Standard specifications as appropriate to the declared  
736 PICS:

- 737 • Application Architecture
  - 738 • Base Device Behavior specification
  - 739 • Green Power specification requirements for a Zigbee Router (Green Power Basic Proxy)
- 740 a. Zigbee Green Power Proxy Basic is a mandatory feature for all Zigbee 3.0 routing capable  
741 devices. However,
- 742 i. If the Zigbee 3.0 routing capable Product was built using a Zigbee Pro Compliant  
743 Platform which implements (and was properly certified for) the Zigbee Green Power  
744 Proxy Basic feature and it has not been modified, the Zigbee 3 Product will only be  
745 subject to a SINGLE Zigbee Green Power Proxy Basic test case as follows:
    - 746 1. Test Case 5.3.1.4 if the Compliant Platform used was certified before  
747 August 1, 2017
    - 748 2. Test Case 5.4.1.23 if the Compliant Platform used was certified on or after  
749 August 1, 2017
  - 750 ii. If the Zigbee 3 routing capable Product was built on a Zigbee PRO Compliant  
751 Platforms which DOES NOT implement the Zigbee Green Power Proxy Basic  
752 feature or HAS NOT been properly certified for it (or it has been modified), then the  
753 Product is subject to ALL applicable Zigbee Green Power Proxy Basic test cases.
- 754 • Zigbee Cluster Library
  - 755 • One or more application device specifications

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

- 757 5) Section 2 Zigbee Certified Program
- 758 6) Section 3 Testing
  - 759 a. Including Section 3.3.1 Zigbee Alliance Test Harness, but not 3.3.2 Test House Test Harness
- 760 7) Section 5.2 Revisions to Specifications
  - 761 a. The grace period SHALL be recommended by the work group as part of the 1.0 approval.

## 762 6.2 Green Power Device Stack

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

### 765 6.2.1 Green Power Device Product Certification Program

766 The Product implementation SHALL conform to these Standard specifications as appropriate to the declared  
767 PICS:

- 768 • 802.15.4 2011 or later as required by the Green Power specification
- 769 • Green Power specification requirements for a Green Power Device

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

- 771 8) Section 2 Zigbee Certified Program

- 772 9) Section 3 Testing  
773 a. Including Section 3.3.1 Zigbee Alliance Test Harness, but not 3.3.2 Test House Test Harness  
774 10) Section 5.2 Revisions to Specifications  
775 a. The grace period SHALL be recommended by the work group as part of the 1.0 approval.

## 776 6.3 RF4CE Stack

777 The RF4CE Stack supports a single Remote Control Standard.

### 778 6.3.1 RF4CE Compliant Platform Program

779 The Platform implementation SHALL conform to these Stack specifications as appropriate to the declared  
780 PICS:

- 781 • 802.15.4 2006 or later as specified by RF4CE specification  
782 • RF4CE specification

### 783 6.3.2 Remote Control Product Certification Program

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

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

- 789 • ZRC specification

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

- 791 11) Section 2 Zigbee Certified Program  
792 12) Section 3 Testing  
793 a. Including Section 3.3.2 Test House Test Harness, but not 3.3.1 Zigbee Alliance Test Harness  
794 13) Section 4 Golden Unit  
795 14) Section 5.2 Revisions to Specifications  
796 a. The grace period SHALL be recommended by the work group as part of 1.0 approval.

797

## 798 7 CERTIFICATION BY SIMILARITY

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

### 804 7.1 Policy

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

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

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

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

### 819 7.2 Certification by Similarity Guidelines

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

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

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

### 832 7.3 Certification by Similarity Guidelines Procedure

833 15) An applicant (Product developer) submits a Testing Exemption Request Form (found below) at  
834 certification@zigbee.org in lieu of testing.

835 16) When applicable, Zigbee Alliance will obtain specification sheets/drawings of both the originally  
836 certified and new Products.

837 17) A review of the Testing Exemption Request Form and specification sheets/drawings will be performed  
838 by the Director of Zigbee Certified. One or more of the authorized test service providers and/or other  
839 experts (e.g. Zigbee Alliance Expert Review Panel) may be consulted by Zigbee Alliance, keeping in  
840 mind the confidential sensitivities that come with an unreleased Product.

841 18) The Zigbee Alliance will issue its assessment to the applicant within one (1) calendar week. One of  
842 two outcomes is possible:

- 843 19) Certification by Similarity is granted. The applicant must complete a standard application for  
844 certification in the [www.zigbee.org](http://www.zigbee.org) Member's Area and the Alliance will process the application as  
845 any other certification.  
846 20) Certification by Similarity is denied. The Product is required to go through testing at one of the  
847 authorized test service providers.

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

## 849 7.4 Guidelines for "Retest"

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

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

## 853 7.5 Testing Exemption Request Form

854 Companies must submit a Testing Exemption Request Form to [certification@zigbee.org](mailto:certification@zigbee.org) for their  
855 Product/Platform/HW to be considered to be exempt from a spot check or full testing.

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

## 857 7.6 Retest Requirements for Compliant Platform Certification

### 858 7.6.1 Retest not required

859 I/O additions on the dev board

### 860 7.6.2 Full retest required

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

### 862 7.6.3 Spot check required

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

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

### 869 7.6.4 IEEE 802.15.4 retesting required

870 See Retest requirements for 802.15.4 compliant radios

## 871 7.7 Retest Requirements for Certified Products

### 872 7.7.1 Retest not required

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



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

### 878   7.7.2 Full retest required

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

### 883   7.7.3 Spot check required

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

### 887   7.7.4 IEEE 802.15.4 retesting required

888   See 7.8 Retest Requirements for 802.15.4 Compliant Radios

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

## 892   7.8   Retest Requirements for 802.15.4 Compliant Radios

### 893   7.8.1 Full retest required

- 894       • Change in Radio IC  
895       • Changes in SW, FW affecting Radio functionality  
896       • Changes requiring retest by regulatory authorities

### 897   7.8.2 Spot check required

- 898       • Change/Addition of a PA (All Tx tests shall be run, Rx tests shall be spot checked)  
899       • Change/Addition of LNA (All Rx tests shall be run, Tx tests shall be spot checked)  
900       • Change of all other components connected externally to the Radio IC  
901       • Change in RF/EMI/EMR enclosures  
902       • Change in packaging affecting RF/EMI/EMR characteristics  
903       • Change in board layout

### 904   7.8.3 Retest not required

905   Change in I/O interface to the board

### 906   7.8.4 Spot check rules (Firmware/Platform)

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

## 911 7.8.5 Spot check rules (PHY)

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

## 917 8 CERTIFICATION TRANSFER PROGRAM

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

### 922 8.1 Certification Transfer Program details

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

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

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

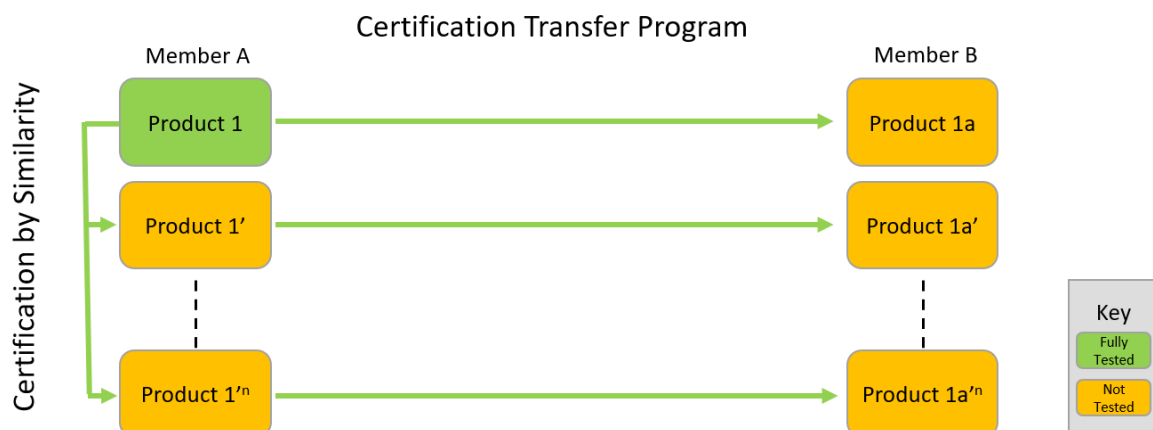
935 The original Certified Product implementation SHALL have obtained its certification by one of the following  
 936 methods:

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

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

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

### 948 8.2 Graphical Representation of the Permitted Certifications



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## 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:	
<p>Note: Revision number is the number used to distinguish this specific build of the Product from a subsequent or prior one.</p>	

<p>Detailed Differences:</p>  <p>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.)</p>	
<p>Has the schematic changed?</p>	<p>Yes: <input type="checkbox"/> No: <input type="checkbox"/></p>
<p>If YES, Please Explain:</p>	
<p>Have any components changed (including RF hardware):</p>	<p>Yes: <input type="checkbox"/> No: <input type="checkbox"/></p>
<p>If YES, Please Explain:</p>	

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

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

951

952

953 Signature: \_\_\_\_\_

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955 Name (Print): \_\_\_\_\_

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957 Date: \_\_\_\_\_

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