



Thread Certification Overview

V8

2024-04-17



Thread Certification Intro – Why?

Formal validation of :

- The product's conformance to the Thread specification

- The product's interoperability with leading Thread reference implementations

Acquire a product license for intellectual property rights (IPR) to Thread technology

Acquire license to use the Thread Group certification logo with the product

Promotion of the certified product via Thread Group PR and social media

Listing of the certified product on the Thread Group website



Thread Certification Intro - Summary

Built on a Robust Foundation of Thread Network Protocol Testing

- Involves a collection of rigorous specification conformance tests, each run against a multi-vendor interoperability test topology - comprised of market-leading Thread reference devices
- Uses an automated test environment comprised of Thread test harness software controlling low-cost, commercially-available Thread reference hardware
- Physical certification testing is carried out by global, 3rd-party network of Authorized Test Labs

Options for Inheriting Certification (non-testing) When Thread System Functionality is Unchanged

- Derivative product(s) may inherit the certification of a parent product
- Modules may inherit stack certification
- End products may inherit component certification



Thread Certification Intro - Policy

Thread Certification is Valid for the Lifetime of the Product

- Company must maintain active Thread Group membership
- No changes may be made to the Thread functionality

Certified Products Must be Re-certified if any Changes Made to Thread Functionality



Thread Certification Intro - Logos



SoCs, modules

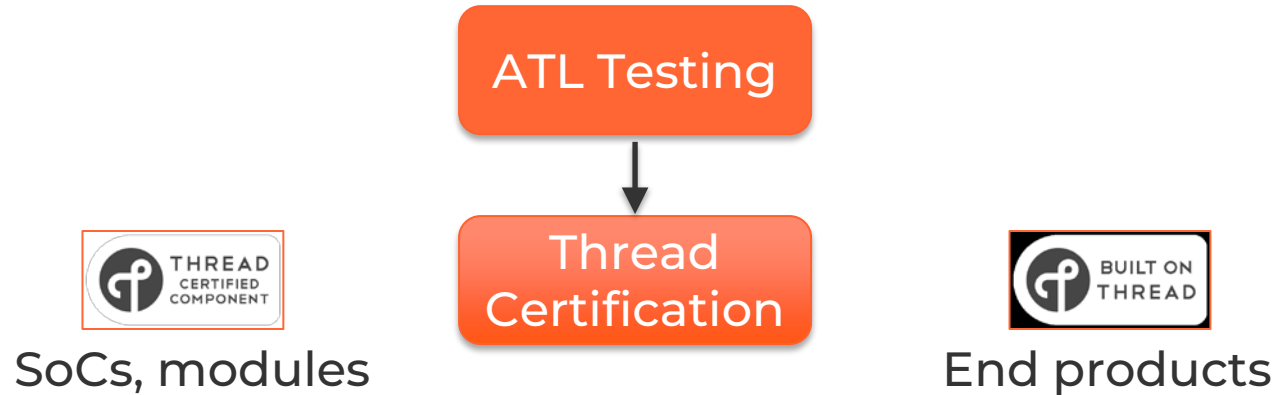
Thread
Certification



End products

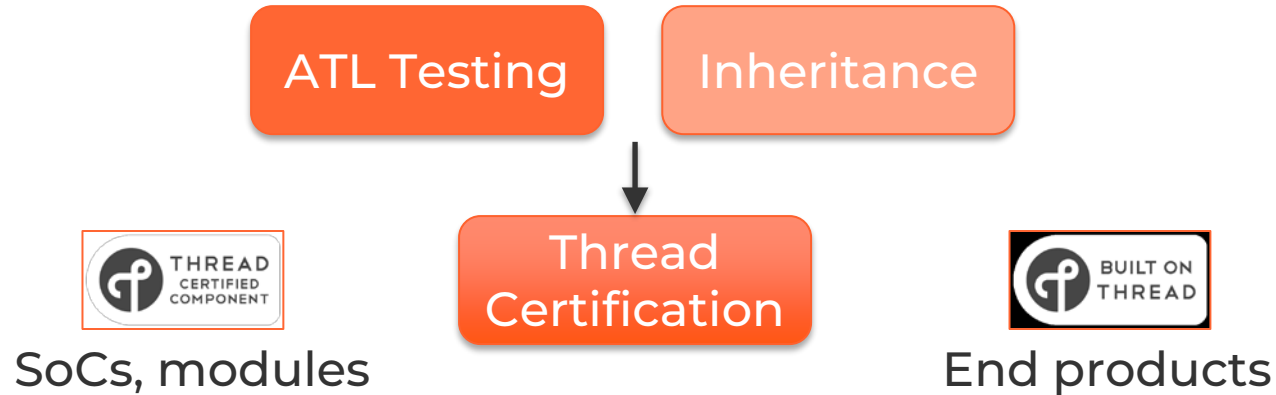


Thread Certification Intro – ATL Testing Approach



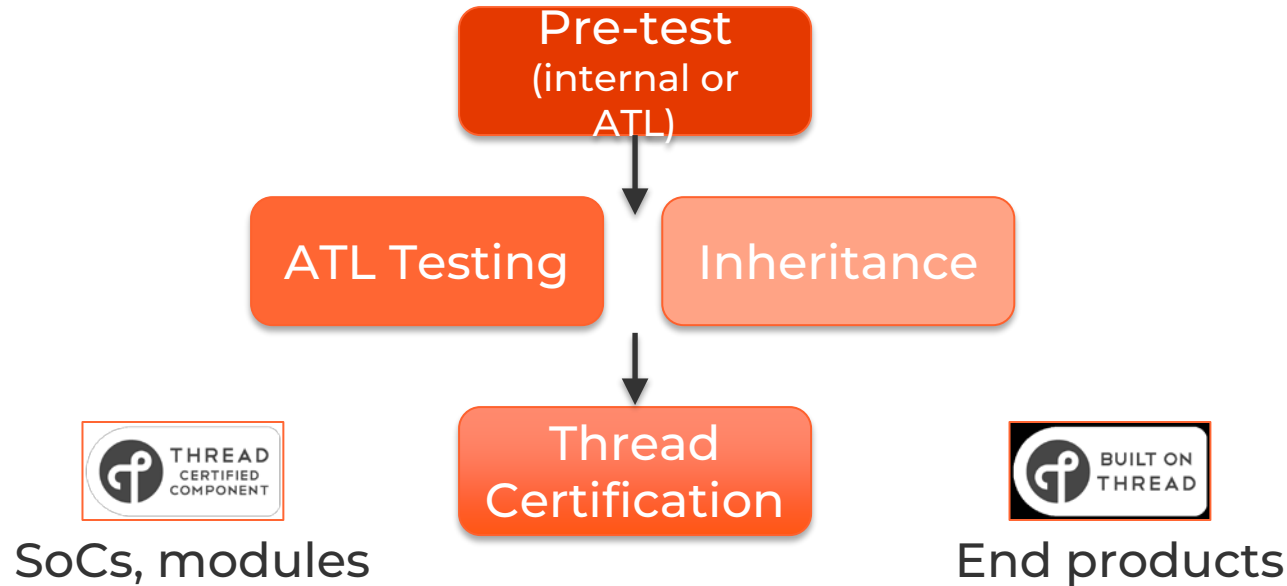


Thread Certification Intro – Inheritance Approach





Thread Certification Intro – Pre-testing





Thread Test Environment Overview

- Automated
- Commercial Quality
- Accessible
- Affordable
- Customizable
- Extendable



Thread Test Environment – Automated, Commercial Quality

Thread Test Harness Software

- Developed by a leading industry supplier; maintained in partnership with Thread Group
- Fully automatic test bed control
- Fully automatic results analysis
- Manual and automatic Device Under Test (DUT) control options

Thread Test Bed

- Thread reference devices are commercial hardware from major vendors



Thread Test Environment – Accessible, Affordable

Accessible and Affordable for Thread Group Members

- Thread Test Harness software is free to Contributors and Sponsors, available for purchase by Implementers
 - Includes ongoing maintenance updates
- Thread test bed equipment available for member purchase
 - Complete Thread Authorized Test Lab environment can be replicated for ~USD 5K



Thread Test Environment – Customizable, Extendable

Customizable for Each Member's Needs

- Configure your device to run automatically under test harness control
- Customize the test bed reference device portfolio – add your device as a reference device
- Create custom tests for internal needs, include them in the regression suite

Extendable

- Set up API control of the test harness for unattended, automated regression runs
- The test harness software can be the cornerstone of a standalone build test environment or interfaced with an existing system



Certification by ATL Testing



Thread Product Certification – ATL Testing

Carried out by 3rd party Authorized Test Lab (ATL) Network

Use of Thread Test Environment is Required

Timeline

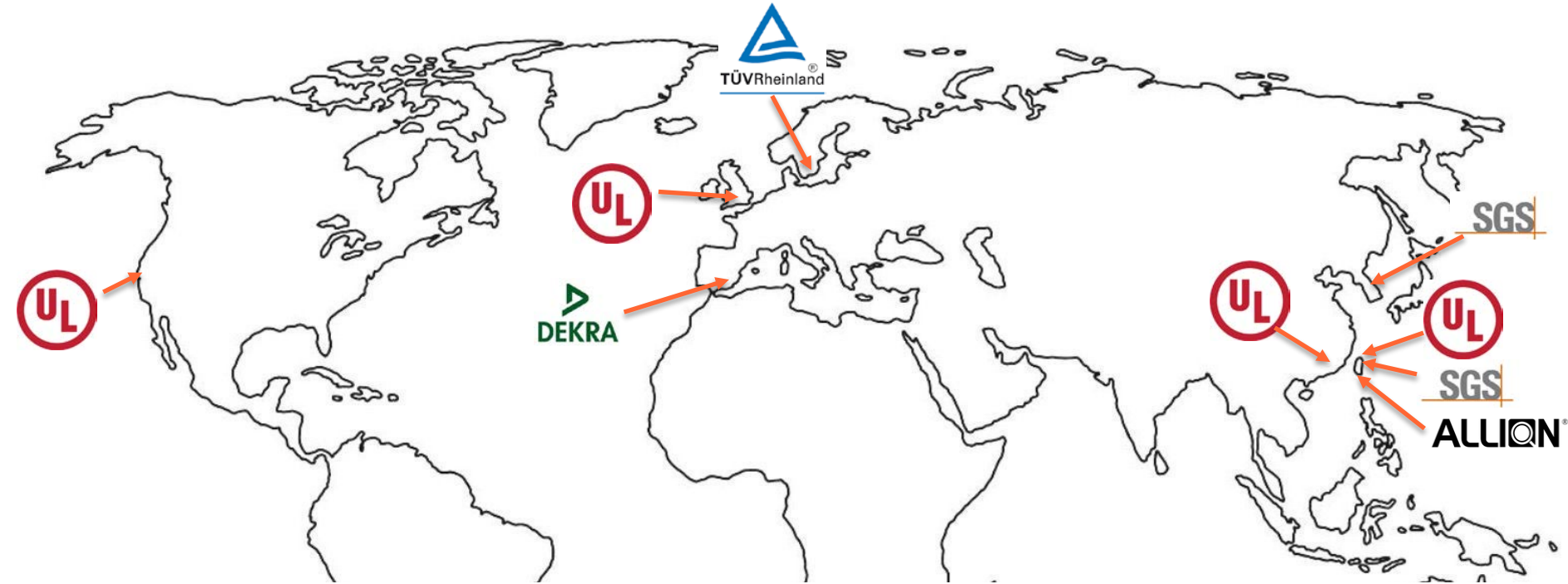
- Typically takes 1-3 weeks for testing, plus up to one week for results review
- More testing involved for more complex devices
 - Approximately 50 tests for Thread V1.3.0 end nodes, 175 tests for Thread V1.3.0 Border Routers

Certification Costs

- Test costs set by Authorized Test Labs
- Thread Group charges separate, one-time administration fee per product



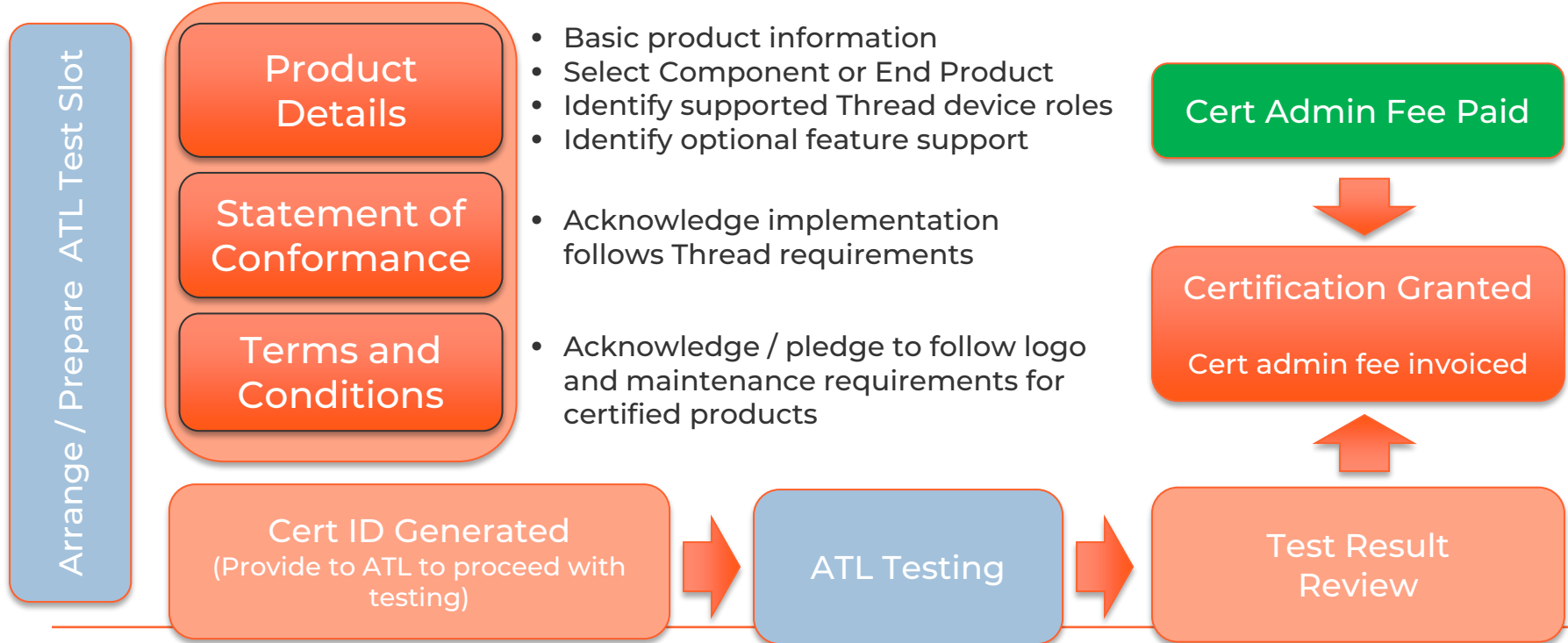
Thread Authorized Test Lab Network





Certification Flow (via ATL Testing)

Certification Application





Certification by Inheritance



Thread Product Certification - Inheritance

Paper Transaction - Carried Out Directly Between Thread Group and Member

- Member needs to understand the certification state of the parent product
- Document the product similarity/change details in the certification application

Timeline

- Typically takes one week (simple scenario) to one month (complex scenario)

Certification Cost

- Thread Group charges one-time administration fee per product application



Certification Inheritance Scenarios

1) Derivative Products – Typically the Simplest Scenario

- Variations of a certified product – typically within a member's own product family
- Non-Thread functional changes, cosmetic changes, etc.

2) Modules

- Use of a certified “system” (stack/chip combination) within a module

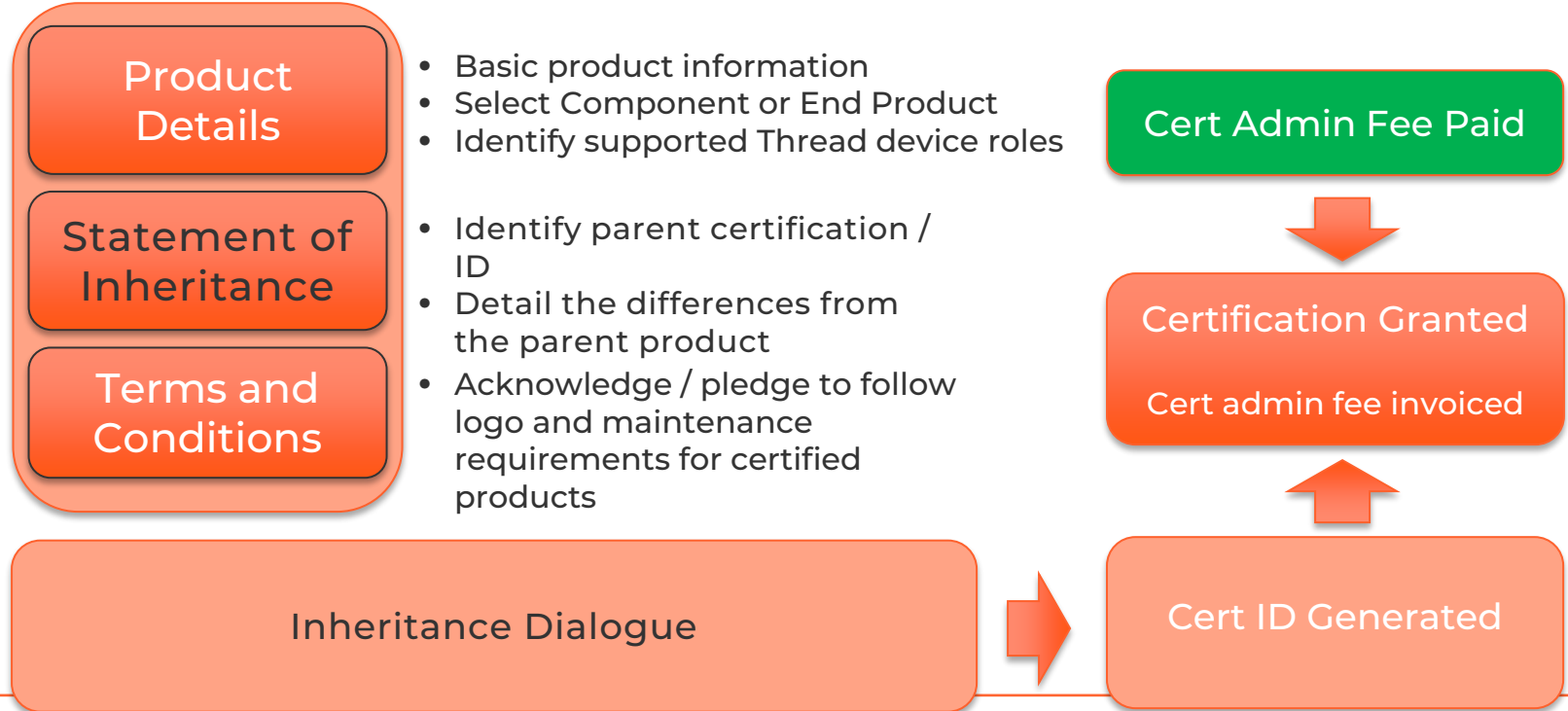
3) End Products – The Most Complex Scenario

- Use of a certified “system” (hardware/Thread stack combination) within an end product
- Feasibility is dependent on specific vendor stack deployment approach
- May require extensive supporting technical information



Certification Flow (via Inheritance)

Certification Application





Thread Certification Access and Fees



Membership Access to Thread Certification

	Sponsor	Contributor	Implementer
Inheritance	Yes	Yes	Yes
ATL Testing / Pretesting	Yes	Yes	No
Internal Pretesting	Yes	Yes	Yes
Test Bed	\$	\$	\$
Test Harness Software	Free	Free	\$

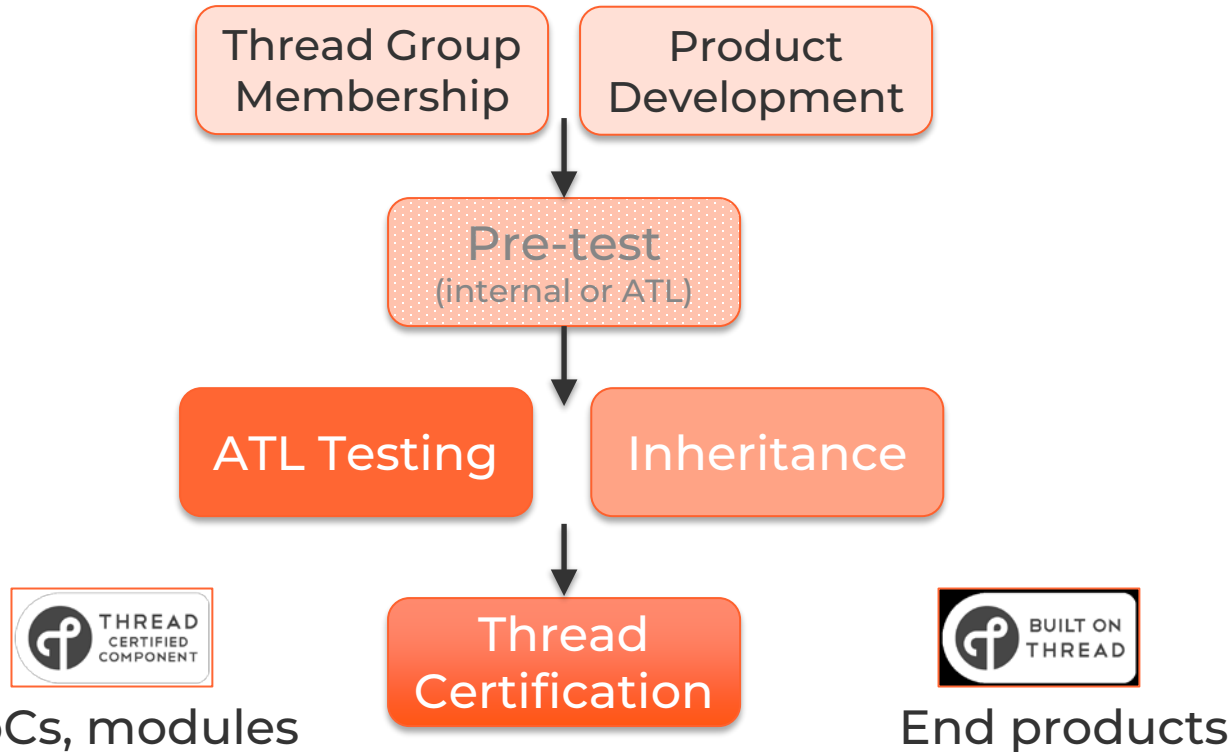


Thread Certification Fees

	Contributor / Sponsor			Implementer	Associate
Certification type (Product type)	ATL Testing (Component)	ATL Testing (End Product)	Inheritance (any)	Inheritance (any)	Inheritance (End Product)
Test fee (per product)	ATL fee	ATL fee	n/a	n/a	n/a
Thread Group Cert fee (new product/features)	\$1250 ea	\$2500 ea	\$1000 ea	\$1500 ea	\$2000 ea
Thread Group Cert fee (maintenance updates)	\$0				



The Path to Thread Certification



THREAD GROUP

Thank You