Avnu Alliance® - Advanced Certification Program – FAQ

Avnu Advanced Global Certification Program

Q: What is the new Avnu Alliance Advanced Certification Program?

Avnu Alliance is announcing a new certification program for devices with Time Sensitive Networking (TSN) capabilities, including devices implementing the Milan™ network protocol for professional media, making testing easier and more convenient for Avnu members around the world.

As part of the new certification program, Avnu also announces expanding testing at newly authorized commercial test labs around the world, as well as a new web-based Certification Management System (CMS) with simplified and intelligent certification workflows, a new product registry database, and other tools for ease of certification for TSN and Milan devices.

There will be no change to the certification logo and Milan-Certified devices will still use the same Milan-Certified logo.

Q: What is the new process for members to certify devices?

There is a simplified process for member certification. Member applicants should prepare the product for certification, submit it through the new CMS one week prior to the devices assigned testing slot at the recognized test facility (RTF). Then there is a $250 USD registration fee at the time of submission and must be paid prior to product tested at the RTF. Once the fee is paid, the applicant sends the product to the RTF for testing. The Product will be run against all

required tests as agreed to in the CMS to determine if the product conforms to the test specs and will interoperate with other devices. The Certification report(s) deadline will be 90 days from completion of test.

RTFs also offer testing for debugging devices that aren't yet certified. Please contact Avnu Technical Program Management TPM@avnu.org for more information about debugging tests.

Q: Why should I get certified?

An open standard alone doesn't guarantee interoperability. Independent certification is key to ensuring each device complies with the specification and therefore interoperates with other devices that have passed certification. This is the guarantee to a no-compromise network that is easier and less expensive to implement.

Certification through Avnu means that end users have more choices with best-of-breed products from different manufacturers without worrying if the selected devices will work together or not. Interoperability ultimately accelerates a broader ecosystem of devices, which is the long-term advantage of Avnu's advanced global certification platform.

Q: How is this program continuing to evolve – what is on the roadmap?

The testing program will continue to evolve; additional certification test plans will become available through these global facilities as the TSN ecosystem grows.

Avnu will continue to innovate in making pre-certification and certification testing more convenient and valuable for member companies by evolving the testing schemas to add more certification programs and new tests to address market needs. These new testing schemas and scripts will automatically be added to the Avnu Express Test Tool when ratified.

Authorized Test Houses

Q: What test houses are open now and taking product for the new Advanced Certification Program?

- Allion in Taipei City, Taiwan
- Excelfore in Tokyo, Japan
- Granite River Labs in Santa Clara, CA, USA and Karlsruhe, Germany

Pro AV AVB switches and AVB automotive devices will be tested at the University of New Hampshire Interoperability Lab in Durham, NH, USA.

Q: What kinds of devices can be certified?

Today, the new program is accepting Professional Audio end devices that meet Milan specifications as well as Milan Modules. Pro audio end devices with a small bridge port will soon be able to be certified as well.

October 2021

Q: What if my device includes a bridge?

If a member has a device with a bridge that only offers 2 ports per network it will soon be covered by the new Advanced Certification Program.

Q: If my end device has a bridge with more than two ports per network, where do I have to go for testing?

Members and interested prospects should contact Avnu Technical Program Management TPM@avnu.org to discuss testing flow.

Q: What kind of feedback does the Test House give members – do you get any kind of results?

The test houses provide members with reports and updates on the device under test including logs of what was observed during testing. The value-add is that test houses can also provide metrics and analysis from the testing procedure to members.
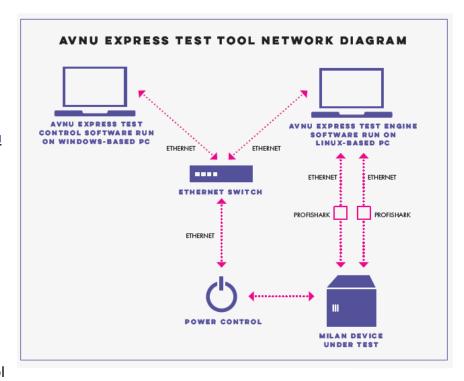
Q: Will there be plugfests?

Avnu will introduce Interop testing and plugfests rotating throughout the globe in 2022.

Avnu Test Tool

Q: What is the Test Tool?

With this new program, Avnu Alliance also introduces tools to streamline the certification process for vendors. This new low-cost validation test tool, called the **Avnu Express Test Tool**, allows members to internally verify device conformance prior to submission for certification testing, provides valuable insights into the product that can be used to optimize product development, debug, and ultimately increase the probability of certification success, saving manufacturers time, resources and money. Vendors can also use the test tool, which bundles test control

and test engine software along with a set of hardware equipment, to verify the performance of end devices using Avnu-Certified modules. Avnu members can purchase floating licenses that allow teams across geographic locations to work using the same tool and the Avnu Express Test Tool will be automatically updated as new test plans become available.

October 2021

Q: How much does the test tool cost?

Members may purchase a yearly software license for the Avnu Express Test Tool. A single license is $2,500 USD and there is a discount for purchasing three or more licenses at the same time. Members have the option of providing their own hardware or purchasing a bundle that will include the hardware test set up. The hardware bundle includes a Linux-based PC, a Windows-based PC and a WiFi router to connect the two along with a remote power switch approved for global use.

Avnu members can also receive a discount for purchasing ProfiShark 1G+ all-in-one Gigabit network TAPs.

Q: How do I get the test tool?

For questions on ordering, members should contact the Avnu Technical Program Management TPM@avnu.org. Processing of an Order for any of the items listed above will be handled through Vprime (a distribution company owned by the same parent company as VTM).

Q: Can I rent the tool from a lab?

Yes, members can rent the tool from labs and should contact the test labs for more information.

Q: What can I do with the results from the test tool? Is that good enough for certification?

Every member must go through a third-party Certified Lab to get their official Certification Certificate from Avnu.

There are two certification test flows that members may choose from to get devices tested. There is a pre-tested certification test flow where a member may submit the completed test report from the Avnu Express Test Tool to a lab and the lab conducts a few selected tests to validate results. This will save members significant development and testing costs and time. Members may also conduct testing in-house.

The other option is a standard certification test flow, where a member submits the product to the lab for testing without having gone through pre-testing. In this case the cost of testing is based on the duration of testing required to test the device.

Q: How difficult is the test tool to use?

The test tool should be easy and streamlined to run. Members will be given a user's manual to help and have access to staff resources to assist if needed.

<u>**Milan Certification**</u>

Q: Why a new certification program?

October 2021

There are various open standards in the AV industry, however they don't guarantee interoperability on their own. Milan has developed the first independent certification program to ensure each device complies with the specification and therefore interoperates with other devices that have passed certification. This is the guarantee to a no-compromise network that is easier and less expensive to implement.

The new program makes it easier, faster, and more convenient for manufacturers to get Milan devices certified and therefore it will scale the ecosystem of Milan devices and increase the pool of available certified devices for end users.

Q: What does Milan Certification Cost?

There is a $250 registration fee that must be paid to the Avnu Alliance at the time of registering for a Test ID Number (TID).

The goal is to have a cost-efficient certification. Avnu has put mechanisms in place to enable lower cost testing with:

1. Significantly streamlined process including new Certification Management System and upgraded Product registry that bring huge improvements.
2. Choice: Now with multiple authorized test houses around the world, competitive pricing will be enabled.
3. With the addition of the Avnu Express Test Tool, the pre-tested certification test flow significantly lowers the cost and time for testing.

Certification costs are set by the Certified Test Lab.

Q: What kind of Avnu Alliance membership do I need to have to qualify for the Advanced Certification program?

The Milan Associate Membership allows companies to join Avnu Alliance at an entry-level membership costing $1,000 per year. These members as well as Promoter and Adopter members can submit devices for certification through the Advanced Certification Program.

Q: How long does Milan Certification Take?

Under the new Advanced Certification Program and through the new pre-tested certification test flow, the time it takes to get a product certified is just days as opposed to weeks.

The standard certification test flow time will depend on several factors. For example; the readiness of the product when it reaches the lab; the queue at the lab, and if the product needs to be retested, etc.

Q: How quickly do you expect to see Milan-Certified devices through this new program?

We expect to see a significant ramp up in the number of certified devices. Various market factors have impacted individual manufacturer product timelines and make it difficult to predict specific numbers at this time.

October 2021

Q: Will members that already have Milan-Certified devices in the market have to get recertified through this new program?

Yes, all devices will have to be Certified through the new program.

Q: What are the benefits of implementing Milan?

Milan removes the guesswork for manufacturers trying to navigate the complicated world of networking technology. The core benefits of implementing Milan are:

1. Milan clearly defines what features, functionality and requirements to include in AV devices to make them work with others on the market: There is no more trial and error.
2. Every device that is Milan-Certified will connect with any other device using a variety of agreed-upon formats and market-required definitions in the protocol.
3. Milan bases on deterministic and synchronous TSN Ethernet technology for highest reliability, best audio quality and easiest deployment of AV networking. Milan is a network standard that is driven and developed by Pro AV manufacturers themselves in close collaboration with IT industry standardization bodies such as IEEE and in touch with leading manufacturers of the IT industry. Milan opens a long-term future for standardized open standard network ecosystems in the Pro AV industry. Manufacturers who implement and certify for Milan can be confident in the protection of their investment with this future-proof networking standard that has long-term support.

Q: What is the benefit of registering Milan devices with Avnu Alliance?

Members of Avnu may register devices that have passed Milan certification testing to claim that they are Milan-certified devices. Milan certification guarantees interoperability with Avnu and Milan-certified devices at the network layer and interoperability with Milan devices at the application layer. End devices that are Milan-certified will be granted the ability to use the Milan certified logo and be listed on the public website of Avnu Alliance.

Module Certification

Q: Are there certified modules for Milan Devices available today?

Yes, there are Milan-certified audio modules available for implementation.

Q: If I implement a Milan-certified Module into my device, do I need to have it tested again or is it automatically considered certified?

Certification through Avnu is the legal and formal documentation that a device meets specifications. All devices must submit paperwork to Avnu to receive certification. Pro Audio devices that implement Milan-certified modules will only require a simplified test for

verification and a confirmation from the Milan module manufacturer and then that verification will be submitted to Avnu for certification and inclusion in the Certified Product Registry on the Avnu public website. Avnu has approved a Milan Module Certification Mechanism to allow module manufacturers to have the modules tested and certified, which removes the burden for manufacturers implementing the certified OEM modules of having to undergo full compliance testing.