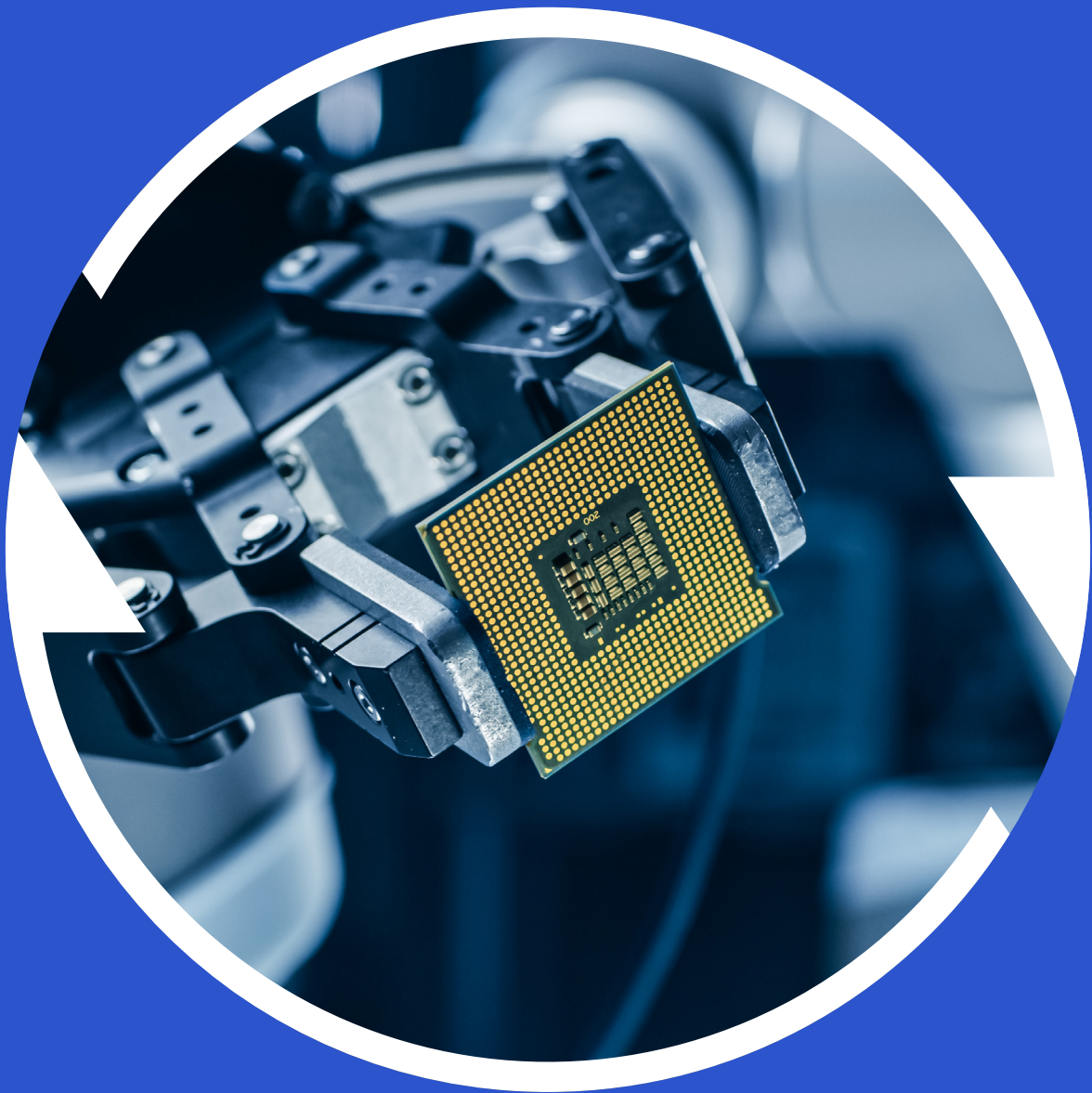


BROCHURE

Spirent Technology Innovation Program

for Network Silicon & Infrastructure Validation



Reducing Testing Complexity & Driving Innovation

System on a Chip (SoC) and Application-Specific Integrated Circuits (ASICs) are designed with complex components requiring diligent and thorough validation to ensure the highest quality. Issues found in silicon chips after they are shipped can result in extremely high costs of software patching and quality assurance and may impact brand image in major ways.

Design issues found late in post-silicon validation cost thousands of hours of wasted effort and may directly affect time-to-market. In fact, the cost of discovering defects after release may be up to 30 times more expensive than during design phase.

Design and architecture	1X
Implementation	5X
Integration testing	10X
Customer beta test	15X
Postproduct release	30X

Source: National Institute of Standards and Technology

Testing early and testing often is key, especially when it comes to the latest industry innovations such as the next Ethernet rates of 400G, 800G and beyond. Continuous testing and automation can help reduce development time and save resources while accelerating delivery of chipsets. Identifying and resolving defects before they become a problem in production will lead to higher efficiency and ensure that Ethernet chipsets meet the industry's high-quality standards.



Prior to Spirent it took us 50 man-hours to set up complex network environments. That workflow is now automated and takes only 10 minutes - we have achieved a [300x acceleration](#).

Michel Langlois, Chief Development Officer
Calix



Accelerating Technology Design & Development

To help improve the reliability of chipset design and improve operational efficiency and quality, Spirent has introduced an innovation program enabling chipset manufacturers to reduce testing complexity, accelerate time to market for new technologies, and ensure that new products perform in the real world as expected.

The **Spirent Technology Innovation Program** was created with network chip, network equipment, and original design manufacturers in mind, to provide effective and efficient test solutions designed specifically for their needs. The program brings together all the essential elements needed to overcome the testing challenges unique to network silicon and infrastructure validation.

Participants gain access to prioritized support from local testing experts, benefit from collaboration for industry proof of concepts, faster fixes for testing challenges and interoperability issues, and a dedicated technology partnership with roadmap alignment.

The program seeks to make labs more efficient by incorporating Continuous Integration and Delivery (CI/CD) and to drive industry excellence through continuous collaboration.



Working with Spirent for our test automation solution resulted in a [3x improvement](#) in SQA engineer productivity.

Test Lab Manager,
Chipset vendor



Technology Innovation Program Overview

 Test <hr style="width: 20px; margin: 5px 0;"/> Accelerate technology design and development in the lab	 Assure <hr style="width: 20px; margin: 5px 0;"/> Ensure new products perform in the real world	 Automate <hr style="width: 20px; margin: 5px 0;"/> Make labs more efficient and readily incorporate into CI/CD	 Collaborate <hr style="width: 20px; margin: 5px 0;"/> Continuous collaboration to drive industry influence
TRUSTED ADVISOR <ul style="list-style-type: none">  Annual technology and roadmap alignment summit  Quarterly product and roadmap updates  Collaboration for industry POCs and interop events 		UNPARALLELED EXPERTISE & SUPPORT <ul style="list-style-type: none">  Prioritized support, enhancements, feature requests  Dedicated escalation manager and product team  Local expert team and direct engineering access  Partner DUT integration into Spirent testbed for interoperability and key use case validation 	

Program Benefits

- **Technology Enablement:** get early access to the latest test solutions to deliver first-to-market, next-gen technologies powered by High-Speed Ethernet (400/800G), 5G, SD-WAN, IoT, Edge Cloud, HPC, etc.
- **Accelerated Time to Market:** optimize time-to-revenue through pre-silicon verification and post-silicon validation to identify issues early and ensure interoperability.
- **Comprehensive Testing Services:** benefit from end-to-end test solutions and services to assure performance, SLAs and QoS while lowering Total Cost of Ownership.
- **Global Support Network:** leverage a team of experienced field engineers to build efficient testing systems and ensure successful deployments.

Joining the Program

The **Spirent Technology Innovation Program** was created for those network chip, network equipment, and original design manufacturers who are looking to drive industry influence and innovation in Ethernet chipset design by leveraging automation as well as the latest test solutions tailored to their needs to make their labs more efficient and their testing more effective.

Contact your Spirent representative to discuss becoming part of this exclusive technology partnership.

CUSTOMER USE CASE:

Chipset Design Validation

One of the world's largest semiconductor chip manufacturers supplying processors for computing companies and NEMs leveraged Spirent test solutions to validate the performance of high-speed field-programmable gate array (FPGA) circuits.

They were looking for an effective and easy to integrate solution to analyze throughput, latency, packet loss and various packet sizes, and required additional Layer 1 control and visibility.

Customer Benefits Included:

- Faster execution through a unified test solution supporting all speeds, automation, RESTful API
- Enhanced Layer 1 capabilities eliminated the need for purchasing traditional Layer 1 tools
- Access to high-speed Ethernet support with high port density and 100G AN/LT support for PAM4 to reduce lab footprint and save valuable development and support costs



Making Innovation Easier

The **Spirent Technology Innovation Program** will modernize your labs' internal skill set and help preserve existing investments so you can continue delivering top quality products to customers. Gain access to industry expertise through end-to-end test solutions, support and services that will transform your business objectives into revenue, enabling you to focus on core competencies and first-to-market differentiators such as reliability and continuous high performance.

The world's leading technology providers choose Spirent's innovative test and measurement solutions to help maintain and advance their positions in a constantly evolving market. Continuous testing of hardware from pre-silicon verification to all the way to post-silicon validation leveraging electronic design automation (EDA) tools, helps accelerate time to market of your latest innovations.

Trusted Advisor

Spirent has been a leader for network testing for over 20 years. Benefit from that experience, technology innovation and thought leadership through technology and roadmap summits, and collaboration in industry POCs and interoperability events.

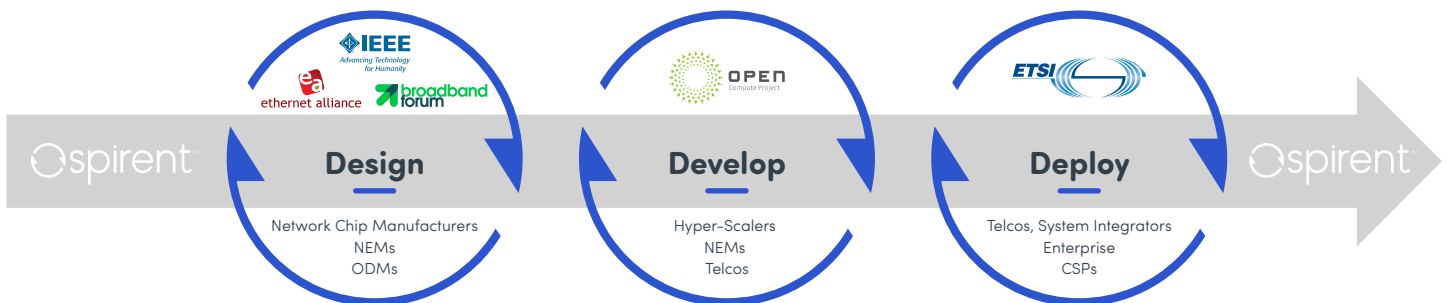
Unparalleled Expertise & Support

Whether you are looking for a turn-key solution to meet current testing needs or strategically augment organizational gaps and limitations, Spirent's dedicated technical experts and enhanced, simplified support experience will maximize your investment by avoiding delays, cost overruns, to meet productivity objectives.

End-to-End Test Solutions, Support & Services

- Leverage common test configurations across all development phases
 - SW and HW development → QA/System Test → Customer POC and Support Labs
- Test cases repeated in all phases of production and development cycle
- Utilizes common test automation framework and interface
- Easily integrated into CI/CD system
- Support for leading EDA emulators

Trusted by the World's Leading Technology Providers



- **9 out of 10** of the world's top Communications Service Providers (**CSPs**) use Spirent
- **100%** of the top Network Equipment Vendors (**NEMs**) use Spirent
- **9 of the 10** of the **largest technology companies** in the world use Spirent
- **Over a decade** of industry experience with **EDA vendors**