**Ospirent™**

# Spirent Managed Solutions

## Test as a Service for 5G – Portfolio Overview

### Overview

**5G validation challenges.** As budgets tighten and complexity intensifies, a new generation of 5G technology demands new investments and strategies. Companies are forced to rethink whether the traditional validation model still works for them. They ask: "Is testing a core competency? Should I still build and manage my testing infrastructure? Is there a faster, less expensive way?"

**5G is different.** All mobile network generations introduced substantial changes during previous versions. 5G is no different, however, the architectural change from physical network elements to software functions running in a shared compute environment represents a fundamental shift which:

- Enables multiple new vendors to deliver differentiated 5G products
- Necessitates segmentation of issues in the shared compute environment from issues in the software components (VNF/CNFs), since these are generally provided by different vendors
- Introduces the ability to deliver iterative ongoing improvements and features, instead of the largely one-time rollout of previous generations

To remain competitive, comprehensive verification in communications service providers (CSPs) must involve a continuous integration / continuous deployment (CI/CD) process delivering continuous testing (CT), capable of rapidly validating functions in a highly automated fashion.

Moreover, introducing so many changes into a live environment exposes any vulnerabilities in test strategies, test automation or test coverage. Without qualified 5G experts inhouse, only an established solution partner can assure the testing strategy is comprehensive, mature and reliable.

### The Spirent Managed Solution

**Spirent's validation approach.** Spirent pioneered a unique approach to comprehensive testing for increasingly complex and virtualized, next-gen environments with its Test as a Service (TaaS) solution. With this solution, Spirent first examines current lab procedures and systems, working with the customer to augment them to ensure it is a solid platform for an automated test solution. Then, in an iterative fashion, Spirent develops and executes automated test suites, reviews results with the customer, and drives issues to resolution with CSP vendors until the technology is ready for live deployment.

## Highlights

- Get 5G and its associated revenue to market faster
- Realize higher quality due to broader coverage
- Reduce cost due to test automation
- Stay ahead of the competition by ensuring 5G testing is part of an ongoing CI/CD process

## Common 5G Migration Challenges

- Growing complexity, especially in new cloud native architecture
- Expanding number of vendors and volume of software releases
- Increasing lab validation times to identify, isolate and resolve faults
- Requirement to take ownership of vendor interoperability
- Inconsistent methodologies and tools between Dev and Ops
- Inherently slow network on-boarding and activation cycles
- Lack of technology capabilities and inhouse expertise
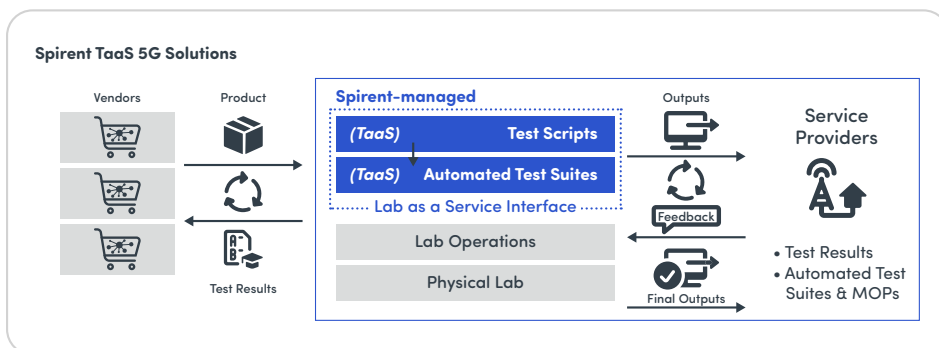
## The Spirent 5G TaaS Value:

- Get 5G to market sooner using the best vendor for each function.
- Stay ahead of the competition through continuous improvement of your 5G infrastructure



Spirent TaaS 5G Solutions

## 5G Testing Challenges

5G presents numerous unique challenges due to the nature of the network and its capabilities.

- **5G Core—**With network functions in 5G Core virtualized and/or containerized, delineation between VNF/CNF issues and the underlying compute environment is crucial. The ability to isolate each function is essential to facilitate the best vendor choice for each function, while also ensuring the integrated solution is robust, secure and performant.

- **5G RAN—**The initial 5G RAN rollout has been non-standalone (NSA), requiring the RAN to interoperate with the 4G Core and to validate the transition from NSA to standalone (SA). While initial rollout of the RAN is on physical network elements from traditional RAN vendors, OpenRAN initiatives are gaining momentum and introduce an expansion of vendor options and virtualization challenges.

- **Devices—**A key objective of 5G is to enable a vast increase in the number and type of IoT devices. The full array of devices must be tested to ensure user expectations are met.

- **End to End—**Each of the areas above can be tested in isolation, but what happens when they are all combined? What is the *real* user experience? With network slicing, different slices are engineered for different use case performance guarantees (SLAs). But how can increased rates be charged unless SLAs can be measured and proven?
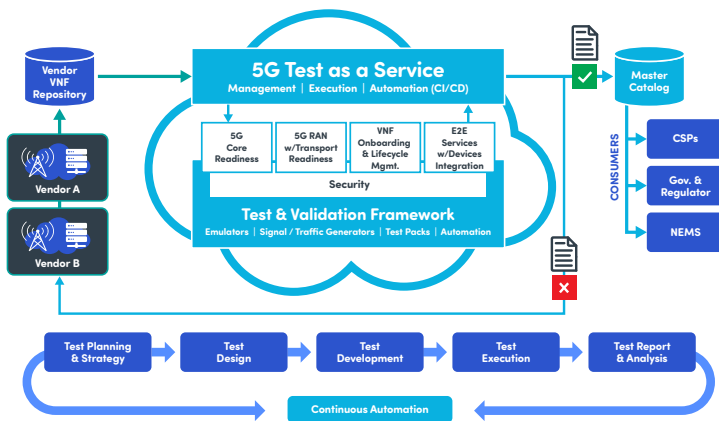
### Automated TaaS Validation for 5G



Testing from the most basic functional detail, through web-scale performance, Spirent's 5G Test as a Service solution delivers impactful strategies for service providers and network vendors, to accelerate the release of new features and ensure optimal user experiences.

## The Solution: Spirent's TaaS Offering

Spirent's 5G TaaS solution combines our test expertise and products into a bundled service that allows us to rapidly complete automated testing on behalf of the customer. Our TaaS offering covers:

- **Ensuring lab process and systems are suitable** to build fully automated test suites for the domains under test, ranging from Spirent adopting the customer environment as is, through a full re-think of lab systems and processes

- **Development of a comprehensive test plan**, and ensuring customer satisfaction with the plan

- **Development and execution of automated test cases and test suites** that fulfill all elements of the test plan

- **Analysis of test results to prioritize issues** in consultation with the customer, to ensure critical issues are addressed first

- **Examination of each issue to determine root cause and drive resolution** of that issue with the appropriate vendor

- **Iteration of the process above** until the technology is deemed ready for live deployment

- **Real-time reporting of testing progress** relative to the plan

- **Integration of this highly automated process** into the larger CI/CD pipeline

Spirent packages the complete and unified solution above, where we take responsibility for the holistic automated testing capabilities driven by key metrics aligned to the customer's business objectives. Our mission is to make our customers successful!

### Business value:

- Faster time to market with higher quality due to broader coverage with the industry's most comprehensive 5G testing portfolio

- Reduced cost due to optimized testing with automation, consistency and repeatability

- Increased agility and scalability, streamlining complexity, delivering stability and predictable outcomes

- Already working with every major CSP rolling out 5G, with a qualified vendor-neutral team ready to hit the ground running with seasoned hands-on expertise in test automation

## What differentiates Spirent's TaaS solution?

Spirent has all of the key attributes CSPs and vendors need in a testing partner:

The **deep expertise in 5G** to deliver world-class **test coverage**

Proven industry leadership in **test automation**

Existing **extensive working relationships** with all 5G vendors, while remaining **neutral**

The ability to ensure a **running start**, bringing a comprehensive portfolio of **testing technology**

Expertise to integrate seamlessly into **CI/CD** with **continuous and independent evolution** of 5G devices, RAN and Core

The Spirent TaaS solution leads with proven technology to ensure a running start that is proven with hands-on experience with real-world Tier 1 operators. Testing is completed from the most basic functional detail through web-scale performance.

## Case Study:
## Spirent's 5G Core TaaS Delivers Results

A tier 1 mobile operator, in transition to 5G, sought to be the first to market to deploy a 5G Core in a multi-vendor cloud environment to enable faster innovation and position its 5G offerings favorably for the future.

To create new 5G services and compete effectively, the operator had to achieve a new level of agility. The 5G Core's cloud architecture was designed for rapid, agile releases, but the operator's existing organization and processes were built around traditional waterfall-style 4G releases that took months to complete. Spirent's TaaS solution for 5G Core was implemented.

## Solution benefits included:

- **Faster time to revenue:** accelerated the launch of the 5G Core by providing 5G expertise and a turnkey suite of validation tests
- **Improved agility:** new 5G Core features can be developed, validated and released 3X faster than 4G
- **Reduced costs:** automated key development workflows and over 100 5G test cases, minimizing the need for new 5G resources
- **Reduced Capex:** 5G test infrastructure delivered as a service, avoiding significant upfront investment

New 5G Core features developed, validated & realeased in **Weeks** instead of **Months** ▶ **3x** faster than **4G**

[Read the case study.](#)

## The Global Services Delivery Process



DISCOVER ▶ DEFINE ▶ DEVELOP ▶ DELIVER ▶ DEBRIEF

**Discover:** Gather requirements; perform gap analysis

**Define:** Identify solutions that scale seamlessly to integrate flexibly with disparate systems; present roadmap; illustrate ROI

**Develop:** Create next-gen end-to-end solutions driven by our technology and service portfolio

**Deliver:** Manage projects; ensure outcomes are measurable, tracked by KPIs and improved over time

**Debrief:** Ensure customer requirements and expectations have been met

## Our Customers

Spirent has been a pioneer since the advent of network, wireless and GNSS testing, validation and assurance and has provided services to customers across a broad range of global industries. These varied business sectors include global navigation satellite systems, aircraft and automotive manufacturers, as well as telecommunications and wireless service providers, network equipment manufacturers, petroleum, education, the media, financial institutions and stock exchanges, technology enterprises and publishing giants. Spirent also services governments worldwide, which includes military and space agency projects.

## Spirent Expertise

Spirent provides services expertise for all major communications vendors — *from Lab to Live*. This end-to-end proficiency draws from a deep bench of seasoned professionals who are qualified experts in our technology portfolio. Our services cover devices, infrastructure, cloud infrastructure, networks, network applications, security and assurance, all powered by state-of-the-art lab and test automation. Such industry expertise maximizes your solution capabilities and ensures you deliver your product or service to market on time and with optimal quality.

## *Spirent Services Portfolio*

Spirent's 5G Test as a Service solution is part of a comprehensive suite of services. Spirent's portfolio of services for an initiative's entire lifecycle — *from Lab to Live* — helps organizations achieve their short-term testing and validation goals, while building a strong framework for future and enduring business success.

### Managed Solutions

Performing strategic operational functions for customers:

- Lab as a Service
- Test as a Service
- Certification as a Service
- Deployment as a Service

### Product Services

Enabling customers to realize optimal use of Spirent products:

- Implementation & Integration
- Product Training
- Resident Engineers
- Product Support

### Consulting Services

Supporting custom projects, helping customers with specific strategies and objectives:

- Assessments & strategy
- Planning & design
- Network architecture & engineering
- Test methodologies

For more information on Spirent's Product Services, please visit: www.spirent.com/products/services-managed-solutions

**About Spirent Communications**
Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks. We help bring clarity to increasingly complex technological and business challenges. Spirent's customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled. For more information visit: **www.spirent.com**

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