



TOTAL TESTING
SERVICES FROM
ARICENT

Aricent

INTRODUCTION

With tens of thousands of hours of testing experience, comprehensive test frameworks, and deep domain expertise across the entire telecom ecosystem, Aricent has become the partner of choice for the top network equipment manufacturers, device manufacturers, and service providers alike. Learn how our testing services enable our customers to accelerate delivery of high quality products and services and stay on the cutting edge of innovation.

OVERVIEW

New standards, networks, and consumer devices are being added at an unprecedented rate. There is constant pressure on the communications ecosystem to be future ready, and yet remain backward compatible at the same time. In this dynamic landscape, high quality testing of network equipment, devices, and applications plays a critical role in assuring satisfaction throughout the value chain.

CONTEMPORARY TESTING CHALLENGES

With rapid changes in technology and user/customer expectations, equipment manufacturers, device vendors, and application vendors face new challenges including:

- **Network Testing and Integration:** Live network environments are complex and expensive to maintain. Furthermore, a growing breadth of domain expertise is required to ensure compatibility and integration with the different components that form a part of today's commercial networks.
- **Broad Interoperability:** As carrier ecosystems become more complex, interoperability testing (IOT) becomes more challenging. New devices and services need to be supported as they conform to evolving and legacy standards. Additionally, it has become essential to replicate all the realistic scenarios and interactions between network elements during the IOT process.
- **Compliance and Certification Approval:** Global certification and compliance requirements are increasing in volume and complexity while becoming more highly specialized.
- **Constant Process Re-evaluation:** Testing methods still rely on legacy models which are not adequate in the new telecom ecosystem. Testing needs to adapt such that new product and service offerings can be launched with a higher degree of flexibility, shorter time-to-market, and improved quality guarantees.

EXPERTISE

Technologies: Testing expertise across wireless and wireline technologies, application software, test and measurement products, and communication devices and services

Wireless GSM, GPRS/EDGE, 3G, WCDMA, CDMA2000, WiMAX, UMA, Femto,LTE	Data Communications Routers, VPN and QoS, ATM, IP, MPLS, GigE	Signalling ISDN, SS7 & SIGTRAN	Packet networks/VoIP IMS, SIP, H.248, MGCP, VoWiFi, Interworking
DSP Video and Voice Processing, Audio/Video CODECS, Network Processor Application, Microcode Design	Broadband & Wireless access xDSL, Satellite, Cable, 802.11a/b/g/i & WiMAX	Network Management TL1, SNMP, CORBA & CLI	Transmission SONET/SDH, RPR, DWDM
Mobile Handsets Physical Layer, Middleware, Multiple OS & Platforms, DSP, Multimedia Applications, MMI	Platform Engineering ATCA, Network Processors	Communication Applications Messaging, Location Based Services, Workforce Automation, Voice Applications	Billing & OSS Multi Vendor Billing, OSS integration

TESTING SERVICES FROM ARICENT

Aricent offers a comprehensive suite of testing services delivered by engineers and consultants with extensive expertise in telecommunication technologies as well as in testing best practices and equipment. We have invested significantly in building testing infrastructure, and in consistently delivering process innovations to address the rapidly changing testing needs seen today.

Services

- **Testing Lifecycle Services:** We provide services across all product and testing stages:
 - Feature testing
 - Functional testing
 - System and platform testing
 - System integration testing
 - End-to-end testing
 - Performance and load testing
 - Interoperability testing
 - Conformance testing
 - Security testing
 - Field and deployment testing
- **Lab Management Services:** We maintain test labs for multiple wireless and wireline customers, and have extensive expertise in remote and local lab planning, setup, maintenance, and management. We assure lab security through compliance with ISO/IEC 17799, ISO/IEC 27001, and periodic audits conducted as per TL9000.
- **Test Automation Services:** Several years of testing experience has helped us to build a large repository of test cases with extensive scenario coverage. The availability of reusable test cases for most standards-based protocols translates into reduction in test cycle time by 50 percent.



vodafone

Aricent

TOTAL TESTING

Our Total Testing offering, helps application, device, and equipment vendors address **field readiness testing** challenges with access to a state-of-the-art Vodafone 3G lab, highly qualified domain expertise, and proven innovative solutions.

Test Tools: Expertise with signal generators, spectrum analyzers, mobile call generators, TDM and packet test equipment, packet analyzers and generators, and time advanced rigs from industry leading vendors



TEST SIMULATORS AND AUTOMATION TOOLS

We have developed powerful in-house simulators and test frameworks in addition to making substantial capital investments in test infrastructure to support the growing businesses needs of our customers.

- **In-house Simulators:** Our simulators help execute complex test cases along with detailed tracking and reporting. These include:
 - **Aricent Network Simulator:** This simulator can be easily integrated with third party equipment to enable performance testing of complex routing protocols. It can simulate complex topologies to replicate typical deployment environments.
 - **Software Tool for Automated Test Environment (STATE):** STATE is useful for unit testing, subsystem and system integration testing, and regression testing of 2G/2.5G/3G/LTE products. It enables control over the equipment for test purposes and also generates customizable statistics and reports.
 - **LTE Network Element Simulators:** Our LTE network element simulators for the SGW, PGW, MME, EPC, HSS, NMS, eNodeB, and UE are 3GPP R8 compatible and can execute all stages of the testing lifecycle.
- **Automation Tools:** Our automation tools provide frameworks to create test plans, execute test cases, develop and run test scripts, and generate and store reports. These include:
 - **Test Automation Framework (TAF):** The TAF can run platform agnostic scripts for load, build, sanity, feature, unit, integration, and regression testing of datacom technologies.
 - **RAN Automation Framework:** This framework allows the user to define execution scenarios using built-in execution blocks to realize test scenarios for 2G/3G radio access network elements.
 - **Test Case Repository:** Our exhaustive repository of test cases, plans, and scripts spans the entire gamut of wireless and wireline technologies. Coupled with the automation frameworks, these can enable one touch daily regression cycles for more than 10,000 scripts with automatic daily reporting in the manager's mail box.

Portfolio of 125+ software frameworks
500,000 square feet of lab space
1,800 test engineers

CUSTOMER BENEFITS



Accelerated Time-to-Market: With comprehensive test automation frameworks, extensive test case repositories, and a skilled resource pool with deep domain expertise, we help our customers accelerate their time-to-market through reduced test cycles and improved product quality.



Cost Savings: Our global delivery model and ability to flexibly deploy and dynamically scale resources allows customers to develop solutions in a cost-effective manner without compromising on innovation.



Excellent Predictability: With comprehensive planning, accurate effort estimation, complete documentation, statistical modeling, and other testing best practices we deliver excellent predictability in terms of project completion and product quality.



Risk Mitigation and Improved Product Quality: Years of experience in testing, expertise in technology, and robust risk identification and mitigation processes ensure the best product quality for our customers.

SUCCESS STORIES



Multi-Service Router Testing for a European Telecom Major
Aricent undertook the verification and validation of key features like LDP, OSPFv3, IGMP, and MSDP in a multi-service edge router for a European telecom major. With the rapid ramp up of resources, setting up of a test lab, coordination between onsite and offshore teams, and alignment with customer processes, we were able to deliver CapEx and OpEx savings of \$2 million to the customer.



LTE eNodeB Testing for a Tier 1 Japanese TEM
Aricent helped a Tier 1 Japanese TEM bring a complex new network element to market by testing features such as call setup, user setup, handover; and standards compliance for the S1/X2 interfaces. Using our test tools to simulate various eNodeB components, we were able to reduce the overall test cycle by 6 months.



Short Message Service Testing for a Leading Application Software Provider
Aricent assumed product roadmap ownership of a leading application software provider's short message service (SMS) center, with end-to-end testing services including post-live support. Through rich experience and expertise in SMS protocols like MAP, IS41, UCP, and proven offshore project execution capabilities, we were able to reduce time-to-market for the customer by 40 percent.



2G/2.5G Base Station Testing for a Tier 1 European TEM
Aricent executed feature and system integration testing of a 2G/2.5G base station for a Tier 1 European TEM through seamless coordination of onsite and offshore teams. By providing critical support for customer trials, we realized a 25 percent reduction in time-to-market for the customer to deliver a high quality field-ready product deployed with 80 customers in 140 countries worldwide.

Aricent

www.aricent.com

Aricent Corporate Headquarters

One Tower Center Boulevard, 18th Floor, East Brunswick, NJ 08816, USA

Tel: +1 732 837 1200

Fax: +1 732 837 1190