iTKO & LISA Introduction

iTKO & LISA Introduction

iTKO mitigates the business risk of IT quality issues at the rate of business change.

iTKO's industry-leading LISA™ software provides Complete, Collaborative and Continuous testing for SOA (Service-Oriented Architecture) applications. LISA reduces the business risk of migrating to SOA environments, while increasing trust across shared technology assets.

LISA tests all components of SOA workflows throughout their lifecycle, from web apps, to web services, databases, messaging layers, legacy objects and application Servers. Developers, QA teams and business analysts can rapidly automate functional and performance tests on a continuous basis through LISA's no-code interface.

Founded in 1999, iTKO's customers range from Fortune 500 financial and insurance leaders, to high-tech and software companies, to healthcare, travel and the government sector. All of our customers, however, come to us because they have a commitment to achieving quality within their business processes. Our goal is to ensure success and high service levels for every company that selects iTKO as a quality partner.

The following chapters are available in this topic.

iTKO Overview

iTKO Overview

Our mission is for everyone to own quality. Basically since our inception as a company, iTKO has preached the message that systems are evolving at a rapid rate from monolithic, centralized applications, to highly distributed composite applications consisting of multiple technologies and authority domains that control them. Indeed we have seen the market move in this direction, with analyst estimates from 80%-90% of Global 500 companies moving some or all of their development and integration efforts toward an SOA (Service-Oriented Architecture) strategy in 2007.So we can see that massive efforts (and budgets) have been assigned to the task of SOA migration in many large companies. The first market response to this coming budgetary shift was a move for the leading software Platform players to start offering the infrastructure components of SOA: the presentation/UI layer approach, messaging frameworks, Servers, and tools for delivering business logic.

Next the software industry as a whole, and several more players, started focusing on SOA Governance, Security and Virtualization, and the compliance rules needed for better interoperability among systems. But establishing trust in this Wild West of competing platforms can be extremely difficult, when the ability to deliver and integrate SOA applications exceeds the industry's ability to properly test these systems. The more complex your IT environment and integration becomes, the more relevant iTKO LISA becomes.

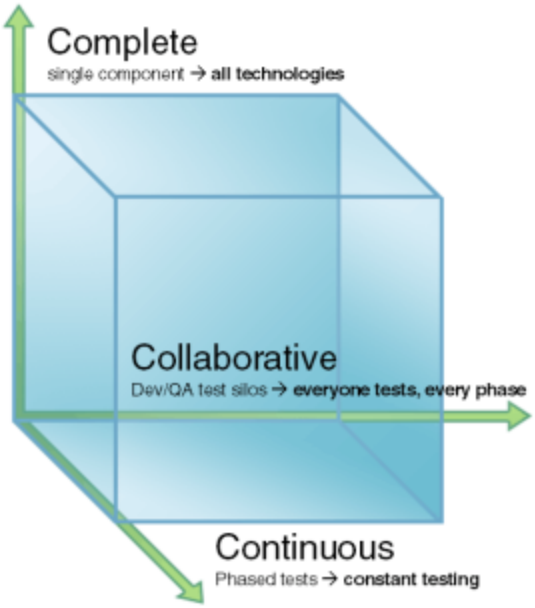
a) Service-Oriented Architecture

a) Service-Oriented Architecture

Service Oriented Architectures offer distinct business advantages.

SOA adoption has gone from experimentation to the mainstream within Fortune 1000 companies, with analyst estimates of IT budgetary allocations toward SOA-based technology (software and services) reaching US$350B annually by 2010.

The growth of SOA is driven by:



- **Reduced integration cost** eased by loosely-coupled components and adoption of industry standards.
- **Increased asset reuse**, enabling new business workflows to be built from existing services to form composite applications with less effort.
- **Increased business agility**, with better control of business process definition and management to meet customer needs.
- **Reduced business risk**, with IT governance, compliance, and strategic development controlled through increased business visibility and agility.

But how will companies trust the quality of SOA for business?
To deliver SOA applications with confidence, enterprises must achieve Complete, Collaborative, and Continuous SOA quality:

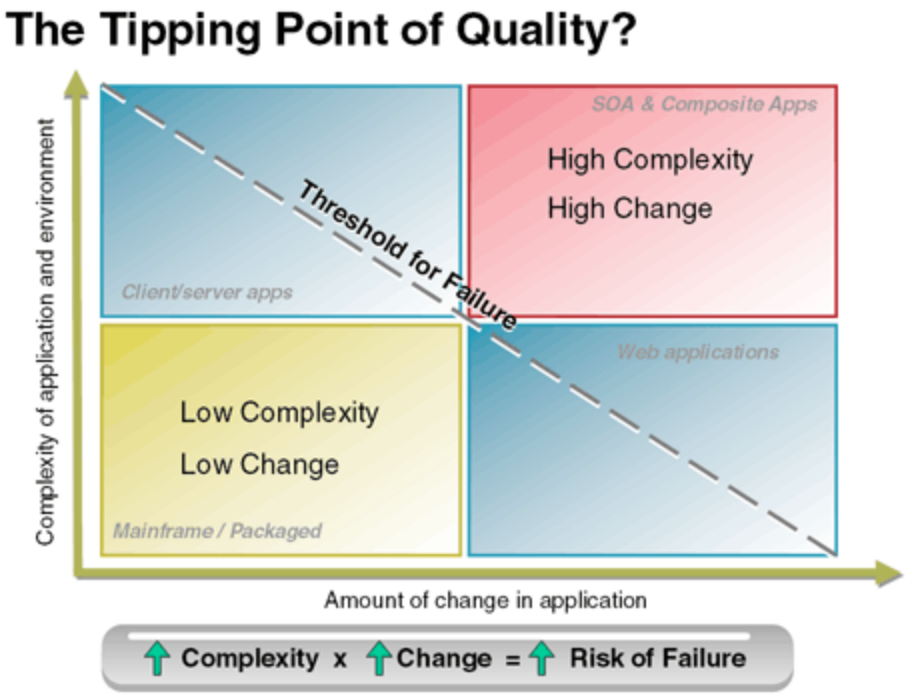
- **Complete** testing of business workflows across every heterogeneous technology layer of the SOA, at both a system and component level.
- **Collaborative** involvement of the whole team in quality. Enable both developers and non-programmers to define and share Test Cases that prove how the SOA meets business requirements during the entire application lifecycle.
- **Continuous** validation of a changing SOA deployment as it is consumed at runtime, ensuring that business requirements will continue to be met as the system dynamically changes.

Leading companies with the most critical need for quality work with iTKO both for best practices and testing strategy, as well as LISA's ability to be used for unit and functional tests during development, then integration, load and performance testing in deployment without having to write code. In preproduction and production, LISA is used to provide continuous testing and monitoring of critical SOA applications.

b) How iTKO LISA Drives Value

b) How iTKO LISA Drives Value

SOA adoption is being driven by the promise of business agility and cost benefits, through loose coupling and reuse of technology assets. The tools to build and deploy SOA applications are available, but the means to properly ensure quality in these systems has lagged behind this delivery capability. In order to achieve the value expected from SOA, enterprises need to address the complexity of heterogeneous SOA environments, and the associated business risk of costly failures.



The tipping point of SOA Testing Value

As shown above, the cost of testing, and the risk of failure, increase significantly when the rate of Change in IT (increased iterations and new connections) and the Complexity (increased number of components, services and standards) grow. Failure to properly test will inhibit the agility of the company to release as often as needed, as well as forcing the company to shy away from new, value added functionality.
SOA aligns technology around the business requirements of multiple stakeholders involved in the application – so no true SOA is built on a single technology standard. Continuous testing and validation must occur at every layer of the SOA architecture at every stage in the development, testing and deployment lifecycle. Without building Quality Lifecycle processes into the ongoing practice of creating and using services-based apps, the enterprise cannot accomplish the Trust necessary for successful SOA.

Value for Quality Professionals and Engineers

Software professionals know testing early and often is essential to having reliable software and reducing the risk of costly failures. However for complex Service-Oriented Architecture (SOA) applications, testing can no longer simply be a phase in the development process. How is testing SOA different from testing typical applications? To avoid the unintended consequences of change in SOA applications, continuous functional and performance monitoring of the business workflow must occur.

- SOA is by nature a heterogeneous environment, so tests must be able to invoke and verify functionality and performance at every layer of the architecture.
- In SOA, most of the business logic does not reside in the user interface, so tests must span multiple layers of the architecture and support dynamic test data.
- Management, Policy and Testing are the key supports for an SOA governance strategy. Good SOA testing practices contribute verifiable examples of Policy that are shared throughout the management process.
- Continuous testing must happen at both build and runtime, as each layer of SOA applications can be developed and introduced into the active deployment on its own lifecycle.
- Extensibility of SOA testing is important, since all enterprise environments contain legacy applications and custom components that contain key business functionality.

Value for Architects

Architecturally, your job is to set the organization on the right path toward SOA. – both for the ability to properly Govern your technology assets to meet business needs, but to prove that your interoperability with third parties and legacy applications meets those business goals. LISA enables Trust, both vertically within the chain of command, and horizontally across departments and business partners, can only happen with a shared vision for Lifecycle Quality, and a shared capability to automate and collaborate on continuous SOA testing.

- There are multiple valid approaches to constructing SOA applications. LISA supports WS-* approaches, enterprise Java, ESB, REST and other design patterns that may be used as part of an SOA strategy.
- Testing must enforce that Policies are met at a shared level across the extended set of stakeholders in SOA, while respecting the autonomy of multiple Federated authority domains.
- LISA allows Publishers and Consumers of services to share a common platform for certifying and validating that the SOA workflows are sustainable as conditions change.
- While Structural integrity and Performance are important and tested with LISA, Functional Monitoring is another key aspect of effective SOA that cannot be put off until deployment time.

Value for Managing and Governing IT

Companies are driven toward SOA by the promise of business agility and reuse. But SOA also creates constant change – which creates business risk due to software failures and misinterpreted requirements. To ensure the level of reliability and trust needed for mission-critical operations, the company must makes sure Quality is embedded into the lifecycle of the SOA. Testing must happen from the time the architecture is designed, through development and integration, and continuously at runtime as conditions change.

- Provides automated risk management. You can't just test expect developers to find bugs at the code level or wait until the application is done at UI acceptance testing. LISA tests continuously, not only for structural or performance problems at runtime, but functional errors – business mistakes that can be particularly costly and hard to detect.
- LISA enforces a real lifecycle quality process alongside the development and delivery processes, enabling real SOA Governance via robust, test-enforceable Policies.
- A shift in processes change is often resisted within an organization. iTKO has extensive experience and best practices in guiding teams toward realizing the benefits of a SOA quality strategy.
- The implementation and training process for LISA is extremely rapid and low-impact, since LISA is easy for teams to learn and tests most technologies involved in SOA right out of the box.

LISA Overview

LISA Overview

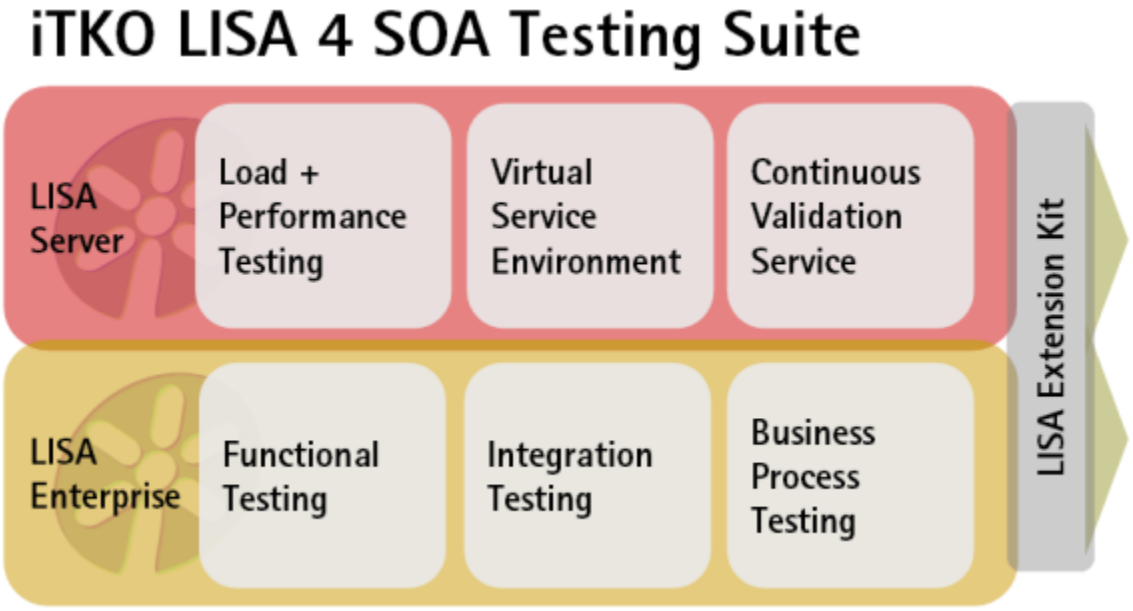
The following topics are available...

a) LISA SOA Lifecycle quality solutions

a) LISA SOA Lifecycle quality solutions

LISA provides Complete, Collaborative and Continuous Testing and Validation of SOA applications. Unlike conventional code testing and UI testing tools, LISA directly invokes and validates against every component of SOA application workflows.

iTKO LISA software helps companies reduce the risk of migrating to SOA environments, while increasing trust and reuse benefits. LISA invokes and deeply tests every component of SOA applications throughout their lifecycle, from the web UI, to web services, databases, messaging layers and application Servers. With a simple double-click installation of LISA, developers, QA teams and business analysts can quickly learn to create, share and automate functional and performance tests on a continuous basis through LISA's no-code interface.



The iTKO LISA 4 SOA Testing Suite was developed from the ground up to test multi-tier SOA applications. All of LISA's test functionality is a singularly developed platform for ensuring quality and minimizing risk in complex, changing enterprise applications, so there is never a concern about sharing LISA tests and testing processes across technologies and phases of the application lifecycle.
LISA is divided into two primary groupings, with an extensibility API for future needs:

- **LISA Enterprise** is the test client that end users employ on their desktop to build and stage unit, functional, regression, and process tests against the system under test.
    - Functional Testing
    - Integration Testing
    - Business Process Testing
- **LISA Server** is the Server-side "engine" for LISA tests, managing the scheduling and orchestration of created LISA functional, load and performance tests on a continuous basis, and managing virtual service deployments and test beds, to ensure critical Service Levels are met at every stage of the lifecycle.
    - Load & Performance Testing
    - Virtual Service Environment
    - Continuous Validation Service
- **LISA Extension Kit** provides the essential flexibility toolset and API required for developers to test-instrument the many custom and legacy technologies that are inevitable in an enterprise IT environment.
    - LISA Extension Kit

b) LISA Four SOA Testing Suite - Products

b) LISA Four SOA Testing Suite - Products

LISA Server

LISA stands for "**Learn, Invoke, Simulate, Analyze**," which describes the basic engine that allows the many types of tests LISA can build and run directly against the system under test. Sounds a little too scientific? Well, whatever your role in IT, LISA can test from design, to development, and throughout deployment to meet the full quality lifecycle needs of enterprise software and SOA applications.

iTKO's LISA Server automates and schedules LISA test suites, providing complex staging, user simulation and continuous test orchestration services for a constantly evolving SOA application environment.

Load and Performance Testing

Load testing has changed from an exercise in deployment to a vital step in the agile (iterative) development process. Waiting for a completed application to stress test at the user interface level is no longer an option. LISA allows for testing individual components, process, and workflows during design and development, during integration, and in deployment. Individual functional tests and system-wide business processes are load tested using the same environment, resulting in efficient test coverage, with rich functional and performance metrics and reports.

Virtual Service Environment

Coordinating and validating services produced and consumed in applications requires maximum flexibility of the platform. LISA provides virtualization of external systems providing consistent responses and reactions when testing SOA applications. Mock services are deployed when a system under test requires interaction with unavailable systems. Testing should not be limited to client calls into the system under test, validation of outbound service requests by virtual services is required to test the entire application.

- Fake services – LISA will create a web service Server and provide dummy SOAP response data to be used as a place holder
- Mock services – LISA will create a web service Server from WSDL and a LISA Test Case is used to validate (assert) inbound SOAP requests and respond with specific SOAP response (JDBC and .XLS data sources)
- Service Simulation – LISA invokes and gathers responses from a service, and creates a robust behavioral model of the service's behavior, including the underlying implementation and data layers underneath it, and creates a Virtual Service internal to the testing process that allows relevant testing to continue in absence of the implementation.

Virtual Test Beds support (at Fail-Over)

- System replay – new proxy level recording of web services and replay of Server SOAP responses.
- Deploy remote testing suites to simulate systems to create the test harness around an application. In many SOA test labs testing of 3rd party services may not be available, Ability to provide virtualization of the supporting infrastructure and provide read responses back.
- Automates virtual test environment staging at build time and change time

Continuous Validation Service

Catching system dependencies and the unintended consequences of changed service behavior is accomplished with LISA's Continuous Validation Service. Application and system validation starts with automated regression of the build lifecycle, through continuous validation of complex interwoven services and business processes. Automating validation through Continuous Build testing will capture regression errors before inter-service business processes are validated. Continuous Deployment validation of service usage and dependencies across multiple builds provides visibility into inter-component trust and governance.

c) LISA Enterprise

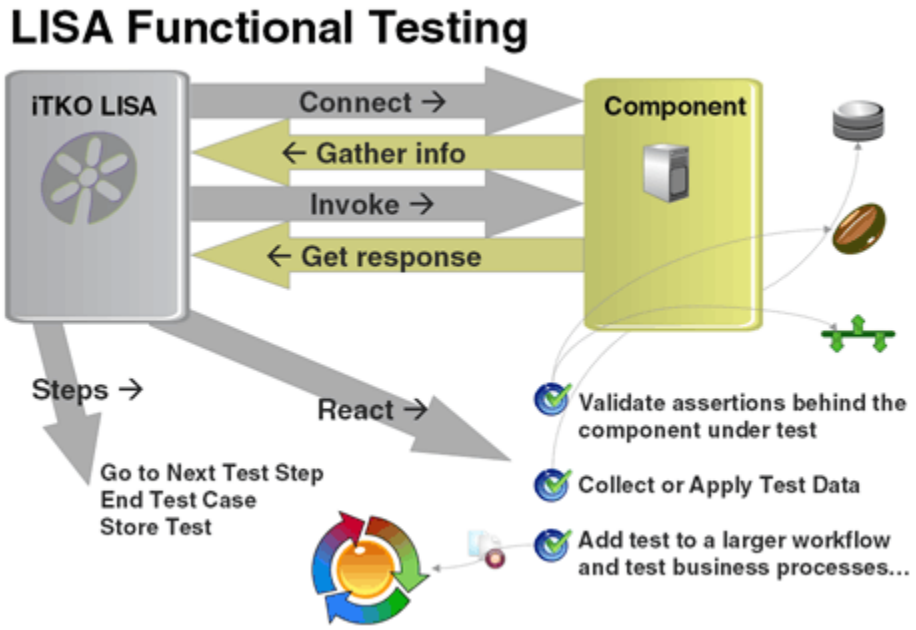
c) LISA Enterprise

Functional Testing

LISA now allows QA, Development, and Business Analyst teams to test rich browser and web user interfaces, as well as the building blocks below the UI. With LISA, all of the components the team needs to functionally test can now be exercised with one tool in a codeless manner.

We have changed the way applications are written and function, and accordingly, we now have to change the way we functionally test the application. Functional testers are challenged to test new "headless" functions that have no interface, and more complex, heterogeneous integrations, while still validating the overall user experience.

The complete testing of an application can only be accomplished when every layer of the application is tested and validated by the business (and not just the developers who built it).



Integration Testing

Testing simple and complex system integrations has moved to the forefront of testing challenges. Out of the box, LISA provides a unique feature-rich environment to address testing of computer to computer integrations and customer to computer integrations. With native support for the major integration platforms like TIBCO, webMethods/SoftwareAG, BEA, Sonic, and IBM MQ/WebSphere, LISA provides the largest breadth of native integration testing capabilities, from unit and functional testing, through load and deployment testing.

Business Process Testing

Business Process Testing redefines the need for a strong collaborative testing platform. Business Process Testing is not only testing end to end processes and the complex systems that make up a business process, but it requires collaboration between the system designers and implementers. Business analysts who understand the flow of information have the ability to augment and tie Test Cases together gaining end to end testing of a process. LISA provides a rich feature set to allow collaboration of testing assets and data between developers and Analysts.

d) LISA Extension Kit (LEK)

d) LISA Extension Kit (LEK)

Every business has existing applications and business logic that needs to be leveraged. SOA and integration lifecycles involve heterogeneous technologies, so LISA gives you powerful extensibility features to bring testability to your legacy and custom-developed components. iTKO built LISA's core testing engines so new tests can be created to "learn" how to talk to your applications. In addition, the LISA Extension API allows developers to embed testability within custom or legacy code, providing rich test feedback and instructions from within the application under test. The LEK toolset has provided rapid testability for dozens of leading enterprises who previously thought there was no way to truly test all of the dependent layers of the architecture.

For additional documentation detailing the functionality available with the LEK, see the *LEK Developer's Guide*

For more information on LISA, visit the iTKO LISA official website at www.itko.com.

Technical Support & Contact Info

Technical Support & Contact Info

If you have a technical question or problem related to an iTKO product, check your service contract and/or support guidelines to find your regional support office location and contact information. Below is a summary of other iTKO Customer Support options as well as specific iTKO Contact Information.

iTKO Customer Support options

LISA FAQ's

iTKO answers the most common test and configuration questions LISA customers face in our FAQ's.

LISA Tech Notes

Deeper content on specific tips/tricks/pitfalls from the iTKO Support is available in our Tech Notes.

Note: You must register and log in to see these topics.

LISA Forums

The iTKO LISA Forums at Forums is the one-stop-shop for LISA users to share and ask iTKO for answers on testing strategies and challenges encountered with LISA testing.

Note: You cannot log in to the Forums without a valid username and password. Please contact **support@itko.com** for a log in.

LISA Release Notes

iTKO LISA release specific information is available on http://www.itko.com/downloads/ga. You will need license information to view this page as it is password protected.

Contact iTKO

Direct support contact is available to current iTKO LISA Editions paid customers, through **support@itko.com**.

We encourage all customers to start at the above resources to ensure you get the fastest response possible.

iTKO World HQ Address :1505 LBJ FreewaySuite 250Dallas, TX 75234 USA

Website : http://www.itko.com

Email : info@itko.com

Switchboard :877-BUY-ITKO (289-4856)

iTKO International :1-214-245-4361

Fax:(817) 281-2458