

**SOLVE
SOMETHING
IMPORTANT**

Cloud Digital Testing Services

Service Definition Document

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Cloud Digital Testing Services

1 WHAT THE SERVICE IS

Leidos provides a full range of cloud testing services including:

- Full end-to-end testing services covering functional and non-functional areas i.e. performance and accessibility;
- Systems Test Automation;
- Development of Test Strategies, plans, co-ordination of UAT;
- Test Governance and Assurance;
- Waterfall V-Model testing or Iterative Agile delivery;
- Test Team augmentation - long or short term talent injections to existing teams;
- Test Consultancy - offering advice on test processes, tooling and best practice;
- Testing as a Service - Flexible and bespoke engagement models - on premise, remote or a mixture of both.

FEATURES

- Agile Accredited, dedicated testers following ISEB guidelines and methods;
- Applied industry-standard test techniques, exploratory testing using test charters;
- Independent team working with central focus on customer requirements;
- Collaborative approach, working closely with customer test analysts;
- High quality test documentation, test strategy/plans/results with full traceability;
- Experience in waterfall, iterative and agile delivery models;
- Risk based approach to prioritisation of testing;
- Proven test tools: automated web service testing with SoapUI;
- Detailed reporting of progress using test tools Hiptest/Testlink/XStudio/Quality Center;
- Extensive testing knowledge covering many industry sectors and technologies.

BENEFITS

- Tailored approach to complex systems multi-tier-enterprise-applications to handheld devices;
- Test governance model providing assurance of system readiness;
- Two-way requirements testing traceability;
- Early identification of test resource pre-requisites, risks and issues;
- Early Problem detection, reduced rework costs;
- Proven test automation framework, lower regression test costs;
- Reduced post go-live support costs, delivering fully verified code;
- Proven system performance using Jmeter to simulate users' volumes;
- Testing evidenced, providing a comprehensive test audit trail;
- Open collaborative process to incident resolution using JIRA.

OVERVIEW

Functional Testing

The core purpose of functional testing is to ensure that the code works as expected, and delivers to users the functionality agreed in each user story.

As developers build code modules to implement user stories and design specifications, we simultaneously create the following manual and automated tests:

- **Unit tests**, covering each code path in a module and mocking dependent modules (e.g., via the Moq framework). The tools used for unit testing include Selenium, TestNG and JUnit.
- **Integration tests**, pulling together cooperating modules, including the database (e.g., integration testing the bespoke API suite). Tools used for integration testing include Postman, SoapUI and JMeter.
- **Full-stack tests**, using tools such as Python and Selenium.

Tools such as Git, GitHub and Bitbucket are used for automated code repository management. The Jenkins automation server is used to facilitate continuous integration and continuous development. Automated toolsets include, but are not limited to, Selenium with Java/C#.NET, Robot Framework with Python, Winium and Odin AXE.

As the development team completes stories, a software release is made to a systems test environment at agreed regular intervals using automated deployment tools. The test analyst(s) then execute the test cases and record test evidence. Defects are raised in the defect-management tool (Jira/TFS/QC etc.) and prioritised with a severity rating.

Usability Testing

User research garnered during workshops informs usability/UX requirements and constraints which are respected by developers as they implement each user story.

Testing solution usability is an iterative and evolving process.

Security Testing

Leidos developers have strong awareness of the major security themes affecting the code they write daily e.g. as presented by OWASP. This awareness is reinforced by the fact that all code they write for each user story is built on architectural exemplar/template(s). This exemplar, and consequently each user story implementation, is designed to avoid major vulnerabilities such as SQL injection, XSS and CSRF.

Performance Testing

Leidos will load test the solution in an environment that mimics the live environment. The testing will cover both realistic and excessive loads, based on the output of capacity planning (quantity and nature of users, typical request profiles, etc.). A tool such as Apache JMeter or Locust.io is used to automate the tests, capturing server metrics, such as response time percentiles, request throughput, CPU, network traffic,

memory, infrastructure auto scaling, disk I/O, etc., as well as database metrics such as transaction throughput, wait time and deadlocks.

Accessibility Testing

Leidos develops solutions that comply with the Web Content Accessibility Guidelines 2.0 and we have implemented solutions to A, AA and AAA standard for our Customers.

Throughout the development the test team checks the four Assistive principles: Perceivable, Operable, Understandable and Robust against the latest WCAG Standards.

Test evidencing and auditing of the WCAG 2.1 AA accessibility standard is completed using accessibility checking tools: Lighthouse Chrome Dev Tools, Jaws, Dragon, Zoom Text, NVDA, Axe, providing a breakdown of issues in severity status.

Systems Integration Testing

This phase, if required as a separate phase from system testing, involves the integration of the system with external systems in a test environment with external interfaces configured. This phase focuses on proving interactions work as specified.

User Acceptance Testing

Following the completion of the functional and non-functional testing sprint, a release of the demonstrated system is made into the Pre-Prod environment allowing the customer to conduct user experience sessions.

Deliverables:

The following baseline candidate list of deliverables is reviewed for relevance to the delivery:

- Test Strategy - This document will be developed and sent for the Client's approval within SLA. The strategy conforms to ISO29119-3 and contains the following details:
 - Methodology of testing suitable for the project (e.g. Waterfall model/V-model/Agile);
 - Test Stages - This section will detail the Test Stages undertaken by Leidos;
 - Requirements - Analysis of requirements for Non-functional testing;
 - Type of testing required to cover each requirement, whether Manual or Automated;
 - Tools required for testing, such as defect management, test management and automation test tools;
 - Tests Coverage and Risks;
 - Overall duration for each test stages;
 - Resources required for testing;
 - Resources other than testing resources required for testing, such as Infrastructure Engineers for building specific testing environments, Deployment Engineers to deploy software packages/releases or Software Architects to support building test environments.

- Test Plan(s) – Test plan for each test phases are created during the design phase. This describes the following details:
 - Scope of testing;
 - Test environment;
 - Test data preparation schedule;
 - Required resources;
 - Test Stage duration;
 - Test scripts development schedule;
 - Test execution day schedule;
 - Test Stage deliverables;
 - Risks and contingencies;
 - Entry and Exit criteria;
 - Test tools.

Below are the various Test plan deliverables:

- Unit and Component Test Plan;
- System Acceptance Test Plan;
- System Test Plan;
- System Integration Testing Test Plan;
- User Acceptance Test Plan – The Clients may produce this document, Leidos can support the Clients team to develop this document;
- Operability and Performance Test Plan – This test plan defines the following:
 - Operational Acceptance Test Plan;
 - Data Migration Test Plan;
 - Operation Acceptance BAT plan;
 - Business continuity Test Plan;
 - Live proving Test Plan.

Other Test design Deliverables:

- Test Automation Design;
- Performance and Load Test Design;
- Test Specifications;
- Automated Regression Test Reports;
- Test Completion Report(s) including Defect Summaries.

2 ANY ONBOARDING AND OFFBOARDING SUPPORT YOU PROVIDE

Where relevant, Leidos will adopt a consultative approach with customers to define and validate their requirements to determine how best to engage with the services. The onboarding and offboarding process is dependent on the specific requirements of the solution, and the delivery methodology agreed upon.

3 PRICING

Please refer to the associated Pricing Document relevant for this Service

4 TERMS AND CONDITIONS

Please refer to the associated Terms and Conditions Document relevant for our Service Offerings

5 FURTHER INFORMATION

Please send your requirement to publicsector@uk.leidos.com. Alternatively, if you wish to discuss your requirements in more detail, please send us the following information and we will be happy to contact you:

1. Your organisation name
2. The name of this service
3. Your name and contact details
4. A brief description of your business situation
5. Your preferred timescales for starting the work.

ABOUT LEIDOS

Leidos is a leading partner to the UK government and the Scottish government as well as having key client partners in transportation and energy. Leidos employs 1300 people across the UK supporting technology and business process transformation programmes for clients such as the Home Office, the Ministry of Defence, the Metropolitan Police Service and NATS.

The success of this work in the UK and beyond shows that we are a trusted partner in the region and that our people can deliver innovative solutions to solve the most challenging problems.

LEVERAGING OUR CORE CAPABILITIES

Our technical core capabilities define the areas in which technical excellence is critical, not only for our business, but in the work we do daily to help customers achieve the important missions on the frontlines of their industry. Explore our core capabilities [here](#)



Digital Modernisation



Cyber Operations



Mission Software Systems



Integrated Systems



Mission Operations



INCLUSION AND DIVERSITY IN LEIDOS UNITED KINGDOM

Leidos is committed to creating a diverse and inclusive workplace, where every colleague has the opportunity to contribute, share their unique ideas and talents, and be supported in their career. Explore Inclusion and Diversity in the UK [here](#)

SOCIAL VALUE

We're committed to supporting sustainability initiatives, tackling workforce inequality and STEM education by enriching the communities to our operations. Learn more about Social Value in the UK [here](#)