



Trust. Value. Velocity

G-Cloud 15

Web Testing Service

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1. About Mastek

Mastek has been delivering Critical National Infrastructure programmes in the UK Public Sector for over a decade now. We are trusted with multiple contracts for the UK Government across Central Government, Health, Local Government, Policing, Public Protection and Defence. The majority of our national services are delivered in contexts of high uncertainty and complexity, while collaborating across multi-supplier environments.

While working for these large and complex public sector organisations, we have continuously refined our management, delivery and underlying processes to reflect key learnings from the sector:

Working through a complex stakeholder landscape: We understand the importance of establishing effective communication channels, building trust and fostering a collaborative working environment that empowers stakeholders to contribute meaningfully to the project's success. Our approach is based on a deep understanding of stakeholder needs and requirements. We leverage our experience and expertise to design governance structures that promote transparency and accountability and use data-driven reporting mechanisms to ensure stakeholders have real-time visibility into project status and progress. At the Home Office, GDS, the Ministry of Defence, and the NHS, we have a proven track record of working seamlessly with large stakeholder groups, including civil servants.

Standards, compliance: We comply with >20 policies and standards, including Government Digital Standards and the Government CDDO Service Toolkit, covering service standards, service manuals, TCoP, and API technical and data standards. Our stringent governance, methods, playbooks and processes (manual and automated) span across service delivery phases, ensuring continuous compliance.

Policy-driven: Policies and procedures largely drive Public Sector organisations. We need to be Agile and flexible to meet demands for policy/regulatory changes, geopolitical events and ministerial commitments.

Culture: We adhere to the Civil Service core values of integrity, honesty, objectivity and impartiality. Key behaviours we promote stem from a combination of Civil Service and Mastek values. These include being passionate, accountable, sustaining predictable and repeatable outcomes, not transferring risk, transparent, leading to enable, acting with transparency, practising a no-blame culture and being flexible.

Mastek's global presence



Australia

Austria

Bahrain

Belgium

Brunei

Canada

Denmark

Egypt

Estonia

Finland

France

Germany

Hungary

Iceland

India

Indonesia

Ireland

Italy

Japan

Jordan

Kenya

Kingdom of Saudi Arabia
(KSA)

Kuwait

Latvia

Luxembourg

Malaysia

Netherlands

New Zealand

Norway

Oman

Philippines

Poland

Romania

Singapore

Slovakia

Spain

Sri Lanka

Sweden

Switzerland

United Arab Emirates (UAE)

United Kingdom

USA

Did you know?

75%

Around three quarters of Local Authorities in the UK who run Oracle have worked with Mastek on their digital transformation journey.

300,000 Users

Supported managing up to 750,000 logins per month to MOD through Identity and Access Management

Crime reduction

We designed, built and manage the UK's Strategic National DNA Database that helps Forensics and Law Enforcement Authorities investigate and stop crime

90% faster

We enabled the National Health Service (NHS) to drive 90% faster response times with a billion pharmacy prescriptions a year.

Technical Service Desk

We provide level 2 and ITSM support for the One Login service at Government Digital Service

22k

Our systems enable 22,000 schools to function efficiently every day of the year.

Healthcare and manufacturing

We delivered Finance, HCM and Supply Chain transformations for clients across health and manufacturing globally powered by Oracle Cloud

Transformation of trade

Transforming UK's trade with the EU and rest of the World by supporting Customs Declarations Services and its trade users.

99.99% Availability

We support the Home Office Biometrics (HOB) Platform, Having migrated it to an AWS platform.

Our digital and cloud services portfolio

Powered by Glide 4.0 and value-based delivery

Industry-aligned approach with business outcomes

Digital engineering and experience	• Cloud engineering and migration • Legacy modernisation • Low code / no code App Dev • DevSecOps • Enterprise integration	• MACH • Digital commerce • UX and CX • Platform engineering • Gen AI software development.
Oracle Cloud and enterprise apps	• Oracle Cloud applications • Oracle consulting • Oracle Cloud infrastructure	• Value-based delivery • Glide 4.0.
Data, automation and AI	• Cloud data modernisation • Business Intelligence and Analytics	• Data management • Intelligent automation • Data Governance.
Salesforce	• Sales Cloud • Service Cloud • Marketing Cloud • Industry Cloud	• Experience Cloud • Mulesoft.
Innovation labs and platforms	• Enterprise workforce scheduler • Connected enterprise • icx-Pro – intelligent part assistant	• iLeaseFinPro.
Cloud enhancement managed services	• Oracle managed services • Digital managed services • Commerce managed services	• Salesforce managed services.

Home Office Biometrics (HOB)

Public sector platform modelled 24x7 with 99.99% availability

Problem

- Transition business-critical Platform services from incumbent supplier with minimal risk
- Migration from private cloud to AWS Cloud.

Solution

- Migrated the infrastructure from private cloud to AWS
- Embedding Kubernetes Containerisation
- Introduced Docker and fully-baked AMIs
- Supporting the platform's self-service functionality using Jenkins Jobs
- Applying security updates to the OS base images through pipelines
- Instituting automated patching and testing for infrastructure images
- Support of configuration, test and releasable artefacts through the pipeline.

Outcome

- **Zero impact** on live service
- **80% automation** of SIT
- Environment Provision **2 days to 1 hour**
- **5x scalability** in handling student BRPs
- Cost saving the authority circa **£9.5m/year.**
- Won the '**Best Use of Cloud Services**' award
- **35%** Incident Volume Reduction.



Government Digital Service

Problem

GDS initiated the One Login programme to create a single front door for identity verification and authentication, which could be adopted and scaled across all government departments. This would improve the user experience by providing the public with a single identification and verification service for the government, reduce costs as each department no longer required its own identity service and reduce identity fraud and identity-enabled crime.

GDS released a tender in June 2023 to provide a Technical Service Desk (TSD) managed service for the One Login service. This service would provide a single point of contact for level 1 and 2 service support as part of the wider support ecosystem. It would be provided in the UK and replace the incumbent's scaled-down non-ITIL-aligned break-fix service.

Solution

In September 2023, Mastek were successfully awarded the TSD contract to deliver TSD on behalf of GDS. GDS had an extremely aggressive programme driven by the onboarding of HMRC as a user, which was a major milestone planned for February 2024, migrating new and existing HMRC users to the One Login platform. The TSD service was expected to go live in November 2023. This was an extremely complex programme which, within this timescale, would deliver:

- The contact centre provider for level 0 directly facing the public
- The TSD supplier in place directly facing all government departments
- The TSD supplier in place providing L1 and L2 engineering support and monitoring
- Continued delivery on the One Login backlog of features
- Continued migration of smaller government departments to the platform.
- Delivery of a new ITSM toolset to be configured for use by GDS and the One Login programme, integrating level 0 to level 3 support
- Working as one team, Mastek quickly integrated into the programme, appointing the leadership team early in the engagement. We collaborated with GDS from the outset, ensuring we tailored the service to their expectations rather than delivering what was written in the contract.

Our leadership team consisted of:

- Service Management Vice President
- Programme Director
- Chief Technology Officer
- Programme Management office lead.

Outcome

At its height, the programme team was circa 15 strong, covering programme/project delivery, PMO, architecture, fraud, security, support, omni-channel and quality assurance. The service team is currently in place providing circa 21 resources now covering end-to-end service management, service delivery and L1 and 2 engineering roles.

As the One Login migrations continue, Mastek is supporting Government departments onboarding to the platform as they transition into the new service and provide One Login a secure Technical Service Desk managed service with:

- Omni channel access for other government departments via telephony, email and web form
- Provision of L1 and L2 engineering support
- 24x7, 365 days a week cover
- 24x7x365 eyes on monitoring service
- Fraud detection and security, GDPR compliant
- End-to-end (L0-3) incident and problem management
- End-to-end 24x7 Major incident management (MIM)
- On-call/call-out engineering support, incident and MI management
- Adherence to stringent SLAs on incident response, call handling and fix times
- End-to-end monthly service reporting alongside TSD KPI and SLA reporting.
- A shift left culture and mindset, reducing the impact of service on product teams (L3)
- Support with service maturity in the programme, preparing GDS to run critical national infrastructure.



Internet-facing platform and applications for Army Digital Services

Developed mobile app and web app with 24*7 high availability

Problem

- New Defence Gateway Portal
- Combine all internet-facing applications into one
- Easy to use
- Enable easier access to the MySeries portfolio of products.

Solution

Designed and developed the following easy-use Progressive Web Apps:

- Defence Gateway Landing Page
- My Leave App
- My Expenses App
- My Health App
- My Details App
- My Appraisal App
- My Admin App
- COVID-19 Reporting Tool
- Commanders' COVID-19 Tool.

Outcome

- Delivered 20+ successful projects
- Deployment Automation
- £7.5m in savings annually
- Zero Downtime
- Environment creation in hours.



Delivered a platform for the Department for Health and Social Care

Delivered capability supporting 200k+ tests in a day,
traced millions of COVID-19 infections

Problem

- Leveraging DevOps platform based on reusable GitHub, AWS and Azure DevOps Pipelines
- Introduce more flexible, scalable and reusable IaC capabilities
- Implement CI/CD pipelines.

Solution

- Uplifted from Cloud Formation into Terraform (IaC)
- Pre-built the AMIs using Packer, with automated security checks
- Immutable infrastructure, thus eliminating the risks of partial upgrades and patches
- Continual Cost Optimisation processes and other service functions, such as Change and Risk management
- Migrated into an organisation-wide collaboration toolset. This included Jira, Confluence, Trello, Miro, Teams, SharePoint, O365, Slack, etc.

Outcome

- 75% reduction in lead time due to pre-built AMIs
- Zero Downtime Deployments
- Delivered a Platform - Secured, multi-tenanted hosted on Azure and AWS in 5 weeks
- Cost reduction achieved through close monitoring of resource utilisation.



Mastek and Technology in the Public Sector

Technical Capabilities	Relevant Technology Capability	Mastek Scale
Software Development Continuous Integration, Platform - Other Products, Cloud Collaboration Tools		Software Engineering 2354 FTE
QA and Test ; API, Automated Functional and Compatibility, Accessibility & Performance		QA and Testing 774 FTE
Cloud Platforms Amazon Web Services AWS Microsoft Azure		Cloud Platforms 1046 FTE
Data BI/MI Components, Integration		BI and Visualisation 725 FTE
User-Centered Design		UCD 25 FTE
Office Automation Tools		Collaboration 4565 FTE

2. Summary

Mastek's **Web Testing Service** ensures flawless functionality, usability, and security across browsers, devices, and cloud environments. Leveraging AI-driven automation, risk-based prioritisation and advanced tools, we deliver comprehensive testing for performance, accessibility and compliance, supported by actionable insights and detailed reporting.

We validate user experience, performance and security using real-world scenarios and automation accelerators to ensure optimal functionality and engagement.

Leveraging market-leading open-source and proprietary tools, we provide multi-perspective web application testing to ensure the best user experience. Our approach integrates CI/CD pipelines for continuous feedback and faster release cycles.

3. Masteks Service

Our services combine manual and AI-enabled automated testing for faster coverage and reduced cycle time. A well-functioning and user-friendly website is paramount for business success in today's digital landscape. Our Web Testing Services offer a comprehensive approach to verifying that your web application or website meets the highest quality standards. We leverage a combination of manual and automated testing techniques to achieve thorough test coverage across various functionalities and user journeys.

Our services include the following:

3.1 Functional Testing

It is testing around the functional flows within the web application. It also covers validation of internal and external broken links, HTML/CSS validation, etc. Includes broken link checks, HTML/CSS validation and workflow integrity.

3.2 Multi-device Compatibility

Cross-platform and cross-browser testing ensures seamless and uniform performance across devices and OS.

3.3 UI Testing

Testing web applications to validate if the web design is Responsive or Adaptive.

3.4 Cross-browser Testing

Test your web application on a testing cloud with multiple platforms, OS and browser combinations.

3.5 Cross-device Testing (Mobile and Other Devices)

Ensure your web applications work across the latest Android and iOS mobile devices with instant access to emulators, simulators and real devices.

3.6 API Testing

API testing for web applications that interact with APIs, we offer dedicated API testing services to ensure smooth data exchange and functionality.

3.7 Accessibility Testing

Specialised experts to ensure a detailed audit which gives your web team the foundation for an accessible, compliant web application that meets the needs of WCAG 2.2. Ensures WCAG 2.2 compliance and inclusive user experience.

3.8 Usability Testing

Ensuring the best usability experience by verifying flows, navigation and layout, speed, content of web-based applications and user help functions.

3.9 Test Automation

Automation integrated with CI/CD accelerates deployment and reduces repetitive effort by 30-40%.

3.10 Performance Testing

Optimises load handling and response times using JMeter, Loadrunner and BlazeMeter.

3.11 Security Testing

Includes OWASP Top 10 checks and threat modelling for robust security.

3.12 Test Strategy, Planning and Reporting

Our services encompass a full spectrum of web test management activities, including test strategy and plan development, comprehensive test case design, meticulous test execution and the generation of detailed reports that provide insights into test coverage, identified defects and overall application health.

4. Key Features

The following key features distinguish our Web Testing Services:

- **Robust test management:** We leverage a well-defined test management process encompassing test strategy, planning, comprehensive test case management and the generation of insightful test reports.
- **Cross-platform automation framework:** Our expertise extends to developing and maintaining automation frameworks that support efficient test automation across native mobile applications, web applications and various platforms.
- **Advanced exploratory testing techniques:** Our testers leverage best-practice exploratory testing methods to identify and uncover potential issues beyond the scope of scripted test cases, ultimately enhancing overall test coverage and software quality.
- **Domain-specific testing expertise:** We possess experience conducting web testing across many business sectors, allowing us to tailor our testing approach to the unique requirements and functionalities specific to your industry.
- **In-depth API testing:** We offer comprehensive API testing services beyond basic functionality checks. Our skilled testers can identify broken or partially functional APIs, ensuring seamless data exchange and application integrity.
- **Web services and message queue testing:** Our testing expertise encompasses SOAP and RESTful APIs and the ability to test message queues used for asynchronous communication within your web application.
- **Cost-effective automation solutions:** In-house frameworks deliver up to 40% cost savings and faster ROI.
- **Agile and scalable testing:** Seamlessly integrates with CI/CD pipelines for continuous quality assurance.
- **Market-leading tools and device expertise:** Our team possesses in-depth knowledge and expertise in using the most widely used testing tools and devices on the market today.
- **AI-Driven Test Design:** AI-driven test design accelerates coverage for complex web workflows.

5. Business Benefits

By partnering with us for Web Testing Services, you unlock a multitude of benefits that enhance user experience, website performance and brand reputation:

- **Improved user experience:** Enhances engagement and conversion rates by optimising usability and responsiveness.
- **Enhanced website quality:** Web testing helps identify and address defects before launch, resulting in a high-quality website that functions flawlessly.
- **Increased conversions and sales:** A well-functioning and user-friendly website translates into higher conversion rates and, ultimately, increased sales and ROI.
- **Reduced development costs:** Early defect detection reduces rework and post-release maintenance costs significantly.
- **Reduced time to market:** Automation accelerates time-to-market by 15-20% and saves 30-40% effort.
- **Improved search engine visibility:** Web testing can significantly improve your website's search engine ranking and organic traffic by addressing technical SEO issues.
- **Enhanced brand reputation:** A website that delivers a positive user experience strengthens your brand image and fosters user trust and loyalty.
- **Reduced overall costs:** Our solutions leverage open-source tools and frameworks, minimising licensing fees and reducing your business's overall testing costs.
- **Faster ROI through automation:** We utilise in-house, ready-to-use, Selenium-based automation frameworks to streamline testing processes, delivering a quicker return on investment.
- **Improved efficiency and lower maintenance:** Our approach promotes higher productivity and lower maintenance costs associated with web application testing.
- **Open-source performance and security testing:** We leverage cost-effective open-source tools like JMeter and BurpSuite for performance and security testing, respectively, saving you on licensing expenses for these crucial aspects of web application quality.
- **Faster turnaround times:** Our skilled and experienced analysts and architects ensure efficient test execution and reporting, leading to faster turnaround times for your testing needs.
- **Optimised web design and infrastructure:** Our testing services go beyond functionality, uncovering opportunities to optimise web design and infrastructure resource utilisation for improved website performance.
- **Reduced cloud migration risks:** Ensures smooth transition with proactive validation of cloud-based web applications.
- **Increased test coverage and quality standards:** Our comprehensive testing approach leads to increased test coverage and adherence to the latest quality standards, delivering a more robust and reliable web application.
- **Reduced time to market:** Efficient testing processes minimise delays and expedite time-to-market for your web application.
- **Access to web testing experts:** Partnering with us grants you access to a team of highly skilled web testing experts, ensuring exceptional quality levels throughout the testing process.

6. Technologies, Languages and Methods

#	Technologies	Languages	Methods
1	- Test Automation Frameworks: - Selenium, Cypress, Appium, Playwright, etc.	Python, Java, JavaScript, C#.	Black-Box testing
2	- Test Management Tools: - Jira, Azure Boards, TestRail, HP ALM (Quality Centre).	-	Agile testing
3	- Defect Management Tools: - Jira, Azure Boards, Bugzilla, Trello.	-	Risk-based testing
4	AI-enabled accelerators for test case generation and NLP-based Intelligent Test automation.	-	Functional Testing

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