



Trust. Value. Velocity

G-Cloud 15

Functional 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 a context of high uncertainty and complexity while collaborating in 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, Ministry of Defence and NHS, we have a proven track record of working seamlessly with large stakeholder groups, including civil servants.

Standards, compliances: We comply with >20 policies and standards, including Government Digital Standards and Government CDDO Service Toolkit covering service standards, service manuals, TCoP, 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 delivers comprehensive **Functional Testing Services** for traditional and cloud-based applications, enhanced by AI-driven accelerators for faster, cost-efficient quality assurance.

We always ensure that businesses are directed to the most suitable functional test strategy for their requirements, meeting Quality Assurance (QA) and quality control measures.

Mastek has built an excellent reputation with an enviable client list across the financial services, Insurance, Education, Retail, Healthcare and public sectors. Our skilled testers meticulously evaluate all aspects of user interaction, data processing and system behaviour to identify and address any functional defects. Therefore, we can also offer our expertise in implementing best practices and processes tailored to project needs, providing cost and speed benefits to our customers.

Our Playwright-based AI Automation Solution, Test Case Generation Agent, Automation Starter Script Generation Agent and Synthetic Test Data Generator Agent – deliver up to 40% effort savings and accelerate time-to-market.

3. Masteks Service

Mastek provides Functional Testing services across all significant known domains. A well-planned, well-defined and effective test strategy guarantees smooth delivery into production.

To achieve the highest quality, we:

- Find potential issues by simulating actual software usage before they impact users.
- Detect and prevent defects early in the product lifecycle to minimise rework, improve quality and reduce overall testing costs.
- Ensure new features and enhancements do not have unintended consequences on existing software quality with the help of thorough and continuous regression.
- Isolate potential quality issues to reduce time to resolution.

We integrate AI-powered tools to automate test case design, script generation and data creation, reducing manual effort and improving coverage. Mastek's Functional Testing Services offer a comprehensive approach to independently verifying that your software meets all functional requirements. We leverage a combination of manual and automated testing techniques to achieve thorough test coverage across various functionalities. [Our services include:](#)

- **Requirements analysis:** We thoroughly analyse your software requirements documents to understand the intended functionalities and user stories.
- **Test case design and development:** Our experienced testers create comprehensive test cases covering positive, negative and boundary value scenarios for all features.
- **Test execution:** Skilled testers meticulously execute the designed test cases, manually interacting with the application to verify expected behaviour.
- **Defect management:** Identified issues are logged in a robust defect management system, facilitating tracking, prioritisation and communication with developers.
- **Regression testing:** We re-execute critical test cases after every code change to ensure regression-free development.
- **Usability testing:** We conduct sessions to evaluate user experience and identify usability issues hindering user adoption.
- **Test automation:** We leverage leading automation frameworks (Selenium, Playwright, Cypress) and AI-driven accelerators to streamline repetitive test cases, optimise efficiency and reduce manual effort.
- **Reporting and tracking:** We provide comprehensive test reports documenting test execution results, identified defects and overall test coverage achieved.

AI-Driven Testing Efficiency: Mastek uses AI accelerators to streamline functional testing:

- Playwright MCP Solution: AI-powered UI and API automation for faster, more reliable scripts.
- Test Case Generation Agent: Automatically creates test cases from requirements.
- Automation Starter Script Generation Agent: Speeds up automation onboarding.
- Synthetic Test Data Generator Agent: Produces privacy-compliant synthetic data for robust tests.

These assets deliver up to 40% effort savings and accelerate time-to-market while ensuring compliance.

4. Key Features

Mastek offers a comprehensive range of features to ensure successful and efficient functional testing services:

- **AI-driven efficiency:** Accelerators for test case generation, starter script creation and synthetic data ensure faster onboarding and compliance.
- **Experienced testers:** Our team comprises seasoned functional testers with expertise in various testing methodologies and tools.
- **Rich domain expertise:** We leverage a strong pool of certified resources with in-depth knowledge of your specific industry, ensuring testing aligns with domain-specific requirements.
- **Flexible service delivery:** We offer on-demand testing services, providing the option of on-site or off-site resource deployment to suit your project needs.
- **Comprehensive test management:** Our services encompass a full spectrum of functional test management activities, including test strategy, test planning, defect management and consistent progress reporting.
- **Handling complex scenarios:** Our testers possess extensive expertise in handling intricate, critical and elaborate functional scenarios, ensuring thorough testing of even the most challenging applications.
- **Agile and diverse testing:** We seamlessly integrate with various application lifecycle models, including Agile, Iterative and Waterfall methodologies.
- **End-to-end testing:** Our services cover comprehensive end-to-end testing across all your business processes, ensuring seamless functionality throughout the user journey.
- **Testing tool expertise:** Our team possesses in-depth knowledge of leading market test and defect management tools, leveraging the right tools for optimal testing efficiency.
- **Robust quality assurance:** Benefit from the support of our dedicated Assurance and Testing Service Line, implementing stringent quality control measures throughout the testing process.
- **Regression testing efficiency:** We create and deploy release-specific functional regression test suites, ensuring efficient verification of new functionalities and regression-free releases.
- **Automation expertise:** Our team combines automation frameworks with AI-led script generation to deliver robust regression suites and faster ROI.
- **Risk-based testing:** When required, we implement a risk-based testing approach, prioritising testing efforts based on identified vulnerabilities and potential impact.
- **Continuous improvement:** We conduct regular internal test audits to identify areas for improvement and foster a culture of continuous process optimisation.
- **Faster ROI on automation:** By leveraging in-house automation frameworks, we deliver a faster return on investment for your automated regression suites.
- **Enhanced user satisfaction:** Regular execution of comprehensive test suites throughout the development lifecycle helps us identify and address issues early on, leading to a more user-friendly and bug-free application experience.

5. Business Benefits

By partnering with us for Functional Testing Services, you unlock a multitude of benefits that drive quality, efficiency and user satisfaction for your software projects:

- **Improved quality of deliverables:** Our rigorous testing processes ensure the delivery of high-quality software that meets all functional requirements, minimising post-release issues.
- **Prevention of functional issues:** Proactive identification and rectification of functional defects through testing leads to a significant reduction in the occurrence of functional problems in your final product.
- **Increased end-user confidence:** You foster greater user confidence and trust in your application by delivering high-quality, reliable software.
- **Reduced maintenance costs and regression cycles:** Early detection and resolution of defects translates to lower maintenance costs and minimises the need for lengthy regression testing cycles.
- **Better insights and faster time-to-market:** Efficient testing processes provide valuable insights into software quality, enabling informed decision-making and accelerating time-to-market for your software releases.
- **Accelerated delivery** through AI-driven test design and automation.
- **Effort savings** of up to 40% via intelligent script and data generation.
- **Enhanced compliance** with GDPR through synthetic test data.
- **Cost reduction through early defect identification:** Early identification of defects through testing minimises the associated costs of fixing bugs later in the development lifecycle.
- **Enhanced automation benefits:**
 - Faster, more accurate results: Automation testing delivers results quicker and more accurately than manual testing, reducing overall testing time and effort.
 - Reduced human error: Automation eliminates the possibility of human error during test execution, leading to more reliable and consistent testing outcomes.
 - Avoided manual repetition: By leveraging automated regression suites, you eliminate the need for repetitive manual testing, freeing up your team to focus on other critical tasks.
- **Risk-based approach for flexibility:** Our risk-based testing approach provides flexibility to adapt testing efforts based on your evolving business needs. We prioritise testing based on identified vulnerabilities and potential impact, ensuring optimal resource allocation and focus on areas of highest risk.

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 Zephyr, Jira Xray, Azure DevOps Tool, TestRail, HP ALM (Quality Centre).	-	Agile testing
3	Defect Management tools: Jira, Azure DevOps, Bugzilla.	-	Shift-left testing

In addition to these tools, Mastek integrates AI accelerators for test case generation, automation scripting and the creation of synthetic data.

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