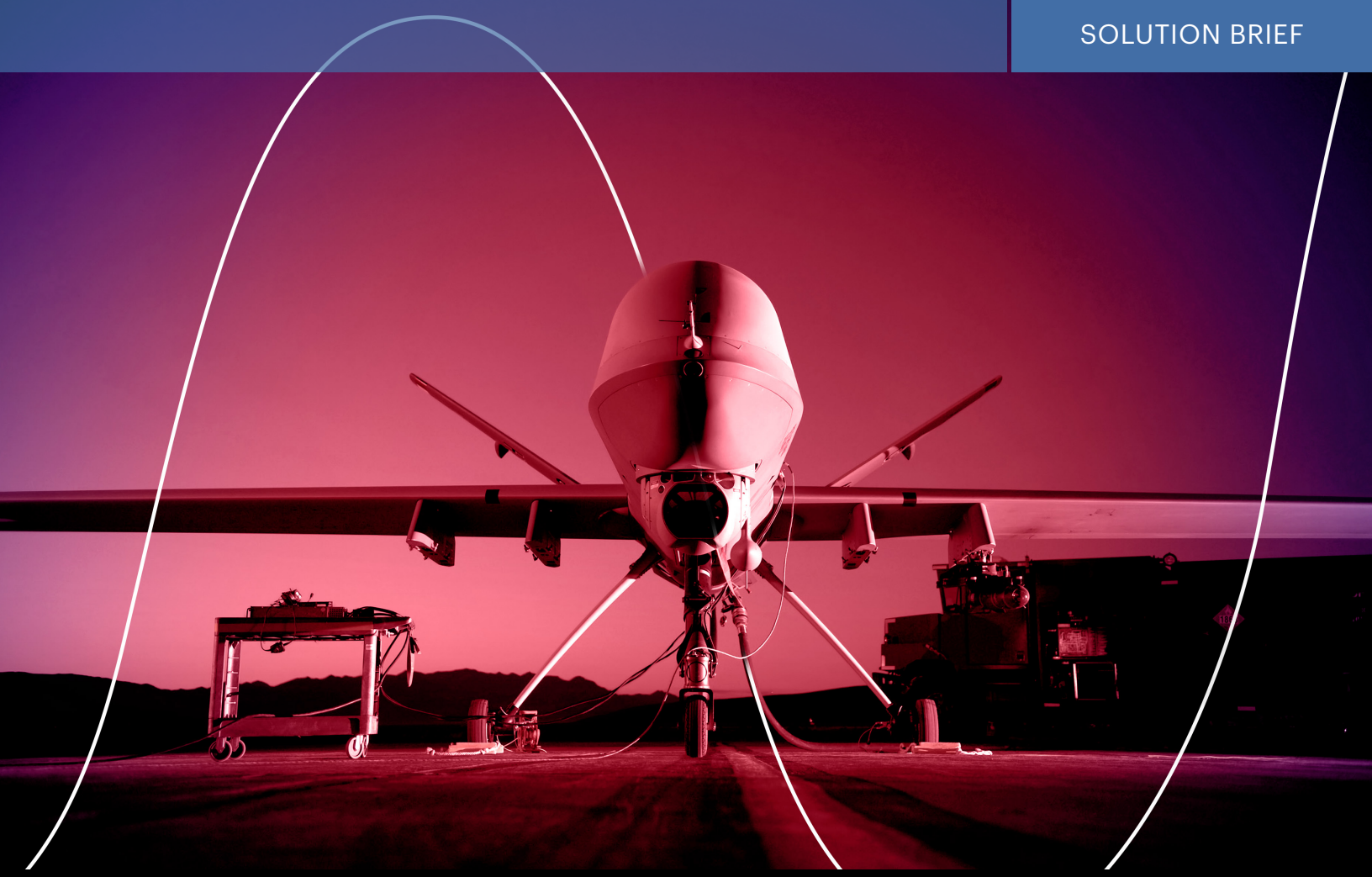
SOLUTION BRIEF



Ensure Mission Success with Advanced AI Test Automation

KEYSIGHT

Mission-critical software teams are under immense pressure to accelerate secure and stable release cycles for major updates, new features, and maintenance upgrades. In aerospace and defense, the pressure intensifies due to the critical need for security and reliability.

To keep pace and reduce the growing backlog, many quality assurance (QA) teams that create scripts manually for functional, regression, and performance testing are turning to test automation to auto-generate test scripts. Test automation enables teams to achieve shorter release cycles and faster time-to-market.

High-performance QA teams can increase velocity and maintain quality by continuously testing as early and frequently as possible throughout the software development life cycle (SDLC). Auto-generating test cases along the SDLC for exploratory testing shortens development, test, and deployment cycles and ensures security is built-in from the start. It also enables teams to increase test coverage and the number of releases.

Implementing continuous testing within the DevSecOps CI / CD (continuous integration and continuous delivery) pipeline also helps software teams quickly identify defects that can lead to mission failure. The advantage of continuous testing is that project teams receive timely notifications on the test status for prioritization and resolution.

Perform continuous testing with Keysight Eggplant test automation software

The visual editor in Keysight Eggplant test automation software simplifies continuous and automated testing along the SDLC, which is essential for DevSecOps. The model-based approach enables you to widen test coverage by combining linear, directed test automation with automated exploratory testing. This type of testing shifts the focus from basic code compliance to the overall user experience. It replicates user behavior regardless of device, browser, or operating system, so you know that what you test will match the user-experience. It has the added benefit of collecting a range of data sets, including real user journeys, testing coverage, and previous test failures, to improve the accuracy of test creation.

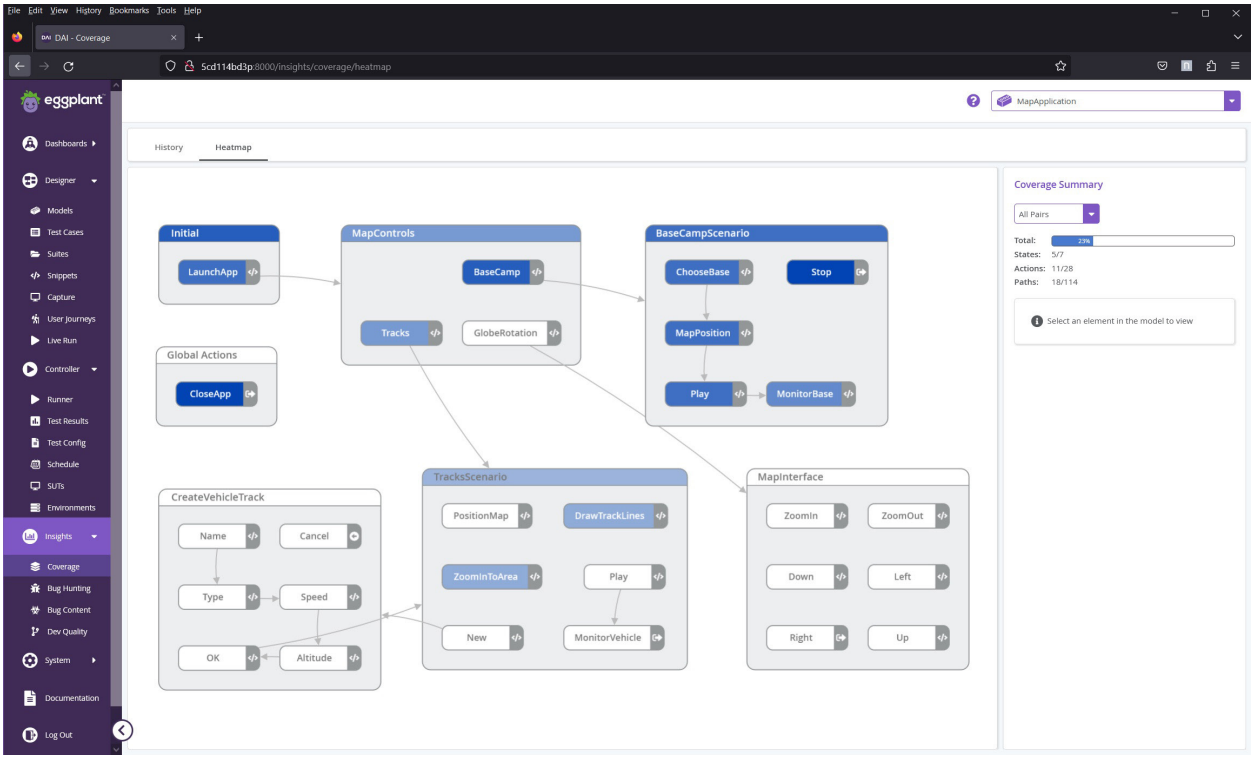


Figure 1. Eggplant's simple user interface (UI) makes it easier and faster to run automated exploratory testing for increased test coverage of new or previously untested features and user journeys.

Automation efficiency increases further with AI-driven bug hunting and exploratory testing algorithms to auto-generate test scripts and snippets for any system under test (SUT). You can rapidly verify UI functionality and code quality across the digital footprint of any user journey, including any device, operating system, and browser.

Find bugs before they spread

Intelligent automated exploratory testing also expands test coverage incrementally to specific parts of an application with known issues. The algorithm proactively explores areas close to these defects since the probability of other bugs is high. The Eggplant visual editor provides simple visual clues when it discovers a bug so testers can quickly identify and isolate problem areas.

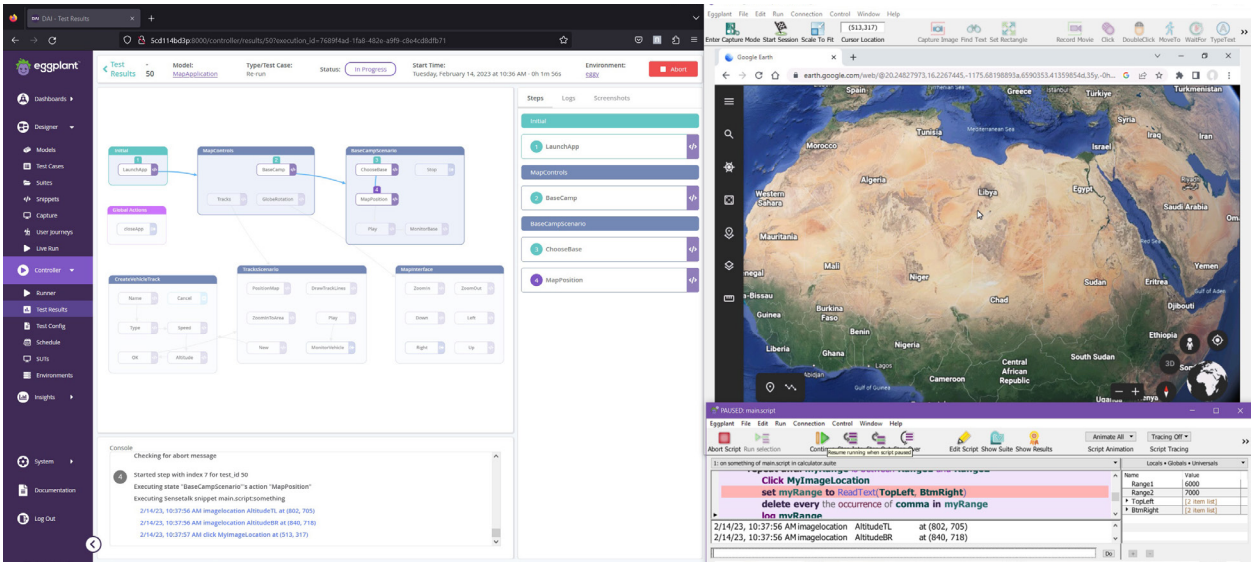


Figure 2. An example of how Eggplant tests a mapping application: the bottom right shows which line of script is being executed along with the log information and current variables with their values.

Uncovering bugs fast is critical due to the rise of interconnected microservices for mission-critical systems and the ability to customize UI functionality to meet specific user needs. Each update, new feature, or change in functionality can introduce unexpected behavior that impacts user workflows, interfaces, and custom configurations.

Defects are costly to fix, especially when your team discovers them in production. A buggy user experience can lead to frustrated users, loss of communication at a critical juncture, or even mission failure.

Eggplant continuously collects test data to overcome these challenges, making it easier to analyze and evaluate the readiness of a release. Test analysis via short feedback loops is essential to improve decision-making, enabling developers to fail early, fix quickly, and move faster.

Keep your IP secure and enable DevSecOps

With Eggplant, the SUT appears in a model, a simple visual representation of an application, interface, or website. The model, a digital twin, enables the code for the SUT to remain untouched, secure, and confidential. Eggplant is the leading enterprise-level solution on the market that is non-invasive in this way.

Eggplant also helps you align with DevSecOps principles. DevSecOps stands for development, security, and operations. It's an approach to culture, automation, and platform design that makes security a shared responsibility throughout the entire IT lifecycle. Eggplant improves security in your software because zero trust can be built in from the start and tested at every stage.

Connect easily with tools you're already using

Eggplant integrates with any tool to complement CI / CD and acts like a DevSecOps pipeline. These capabilities improve developer productivity through short feedback loops via applications like GovSlack and Jira for instant test result notifications. Connecting with Jira closes the communication loop by raising a ticket or case ID, which helps developers prioritize issues in the next iteration. Eggplant can also automatically configure each test run with a GovSlack Webhook to share test details with your Slack channel.

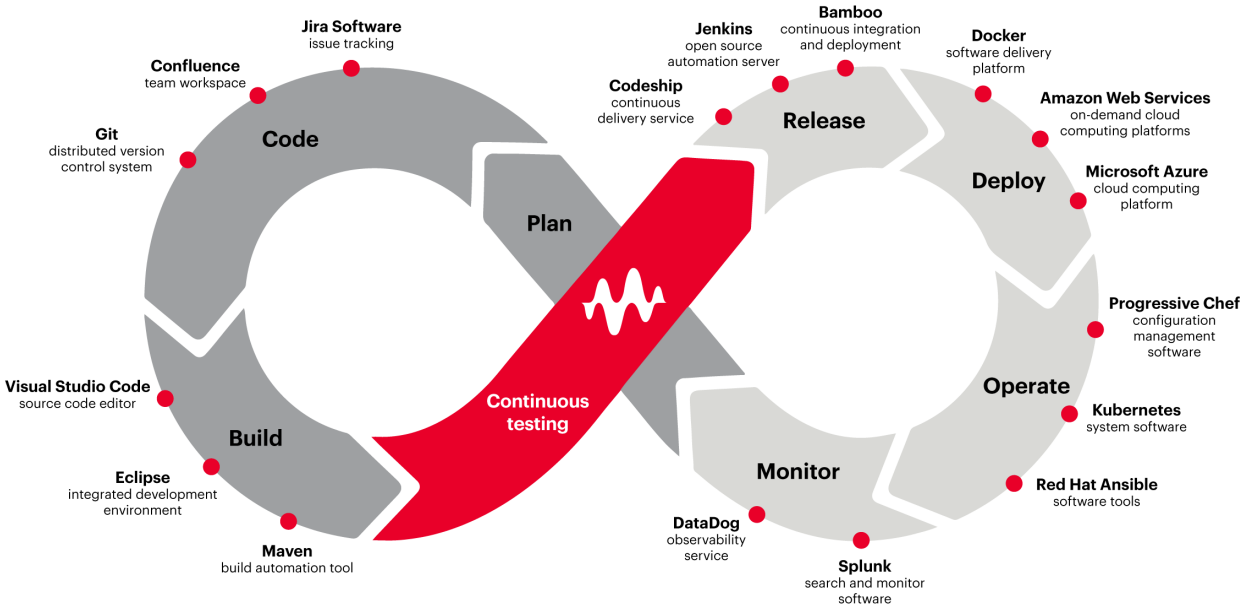


Figure 3. Eggplant is flexible and works with any existing technology to seamlessly integrate with tools essential for a CI / CD pipeline

Summary

All aerospace and defense organizations aim to increase the speed of delivery and release quality software products that warfighters can rely on in their missions. Testing is critical, but manual tests often slow the process down significantly. Overcoming these QA challenges requires a test automation solution that empowers continuous testing and integrates into CI / CD pipelines. Driven by AI and machine learning, Keysight Eggplant seamlessly enables continuous testing to accelerate deployments and optimize teams' ability to deliver on the mission successfully.

To see how Eggplant in action, take a tour or schedule a free trial today. Learn more about how Eggplant can help you rapidly deploy bug-free, resilient software.