Mobile Script-less Automation Framework (mSAF).

Challenges in testing mobile applications

Mobile applications have become a "game changing" force for enterprises across all industries. Organizations have an unprecedented opportunity to boost revenues, decrease costs and reach out to their customers.

These game-changing technologies have also introduced a unique set of testing challenges:

- Rapid rollout schedules
- Varying form factors and screen resolutions
- Multiple connectivity modes, such as bluetooth, Wi-Fi, GPS / GPRS, NFC
- Seamless integration with backend systems – supply chain, ERP, billing systems
- Native applications that can be accessible via mobile browser
- Testing on multiple mobile platforms and operating systems such as android, iOS, Windows Mobile

Addressing the challenges through manual testing is not possible and automation is the only lever that can be applied to address the cost and time to market needs without compromising on the coverage.
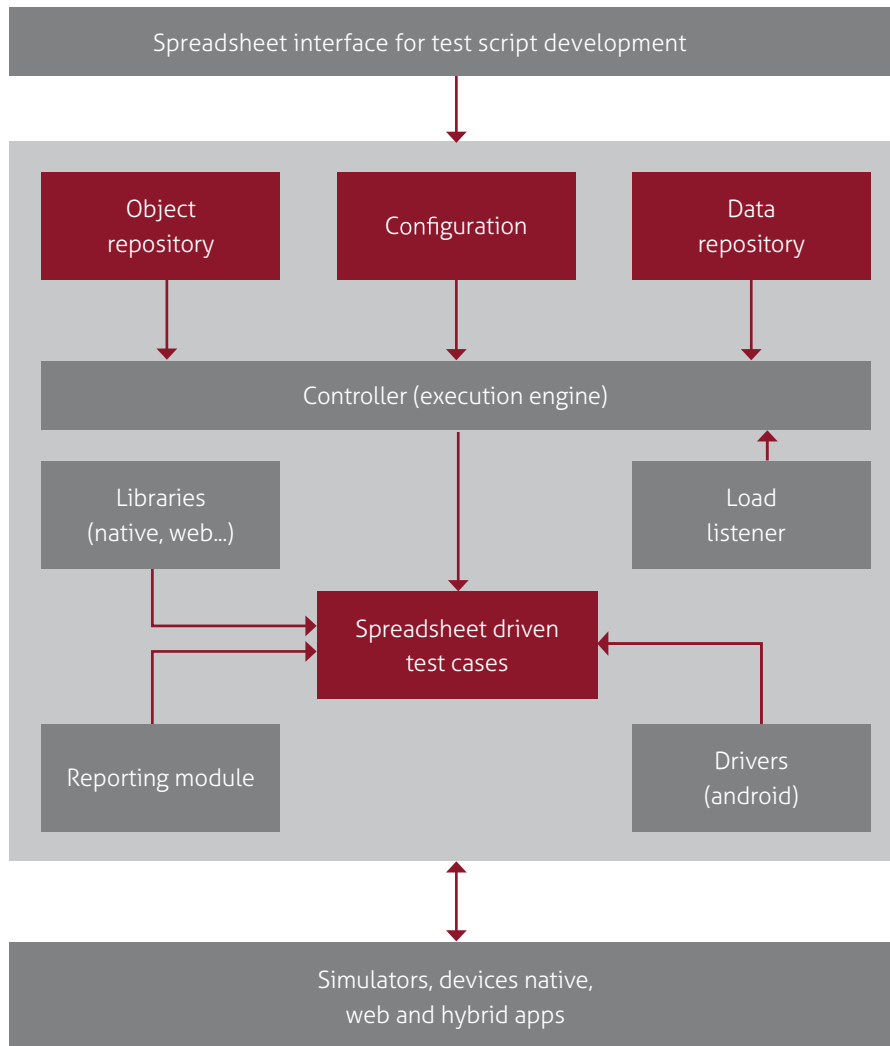
Today, there is a natural rush for innovative test wares, but there has not been one compelling solution that can address all the above challenges. Mindtree has developed a script-less comprehensive automation solution for testing applications on smartphones, tablets or any kind of portable hand-held devices in the form of mSAF which is based in open source tools.

Mobile Script-less Automation Framework – mSAF

mSAF is a hybrid automation framework based on award winning QAI 2009 white paper on "Building an Automation Framework" around Open Source Technologies using Plug-And-Play (PnP) architecture. This automation framework leverages variety of open source tools and utilities (NativeDriver, WebDriver, etc.) coupled with Mindtree proprietary reusable components, such as object, keyword and data mapping as shown in the architectural view.

Spreadsheet interface for test script development

Object repository	Configuration	Data repository

Controller (execution engine)

Libraries (native, web…)		Load listener

Spreadsheet driven test cases

Reporting module		Drivers (android)

Simulators, devices native, web and hybrid apps

mSAF features

- Script-less framework
- Easy spreadsheet interface for test suite configuration and development eliminates the need for programming experts
- On the go automation – framework comes as an application for android
- Robust and extensible framework to support test automation on diverse sets of native, web and hybrid applications across different platforms (android, iOS)
- Single automation script for both iOS and android (device / tablet) for mobile web applications
- Support for sequential and concurrent execution on various browsers, devices
- Supports data driven testing and reusable functions
- Enables users to perform functional, acceptance and compatibility testing for mobile web, native and hybrid applications
- Works both on device and emulator / simulator
- Highly scalable with less maintenance of test scripts
- Increases test automation coverage and reduce testing costs
- Provides detailed reporting with screenshots, passed, failed, skipped, and error logs

Success story

The customer develops portable navigation devices, in-dash infotainment systems, fleet management solutions, maps and real-time services for the European market. Mindtree reduced the overall test execution cycle time by 40% using mSAF. We leveraged the behavioral driven feature supported by mSAF to automate 20% of use cases which covers 80% of the functionality for an android based portable navigation device.

About Mindtree

Mindtree is a global information technology solutions company with revenues of over USD 400 million. Our team of 11,000 experts engineer meaningful technology solutions to help businesses and societies flourish. We enable our customers achieve competitive advantage through flexible and global delivery models, agile methodologies and expert frameworks.