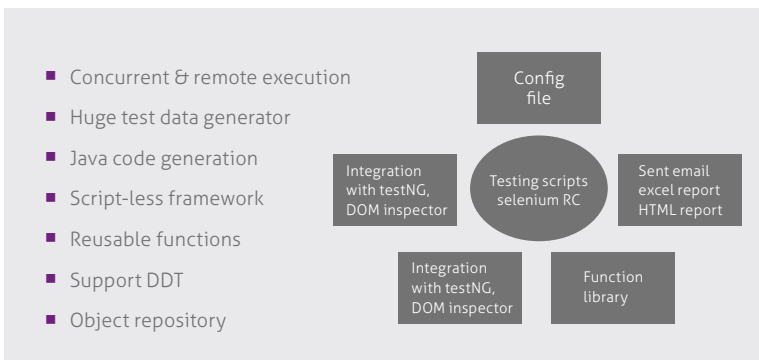# Mindtree
*Welcome to possible*

# Selenium Automation Framework (SAF).

## Quicker, more reliable test automation

Automation technologies improve test coverage and yield higher quality products. They save thousands of manual test execution hours, significantly reducing costs. SAF is a customized framework developed using Selenium, a widely accepted web application automation tool. It shrinks test cycle times and related costs. Selenium is a portable software testing framework for web applications. The tests can be written as HTML tables or coded in a number of popular programming languages. They can be run directly in most modern web browsers. Selenium can be deployed on Windows, Linux and Macintosh.
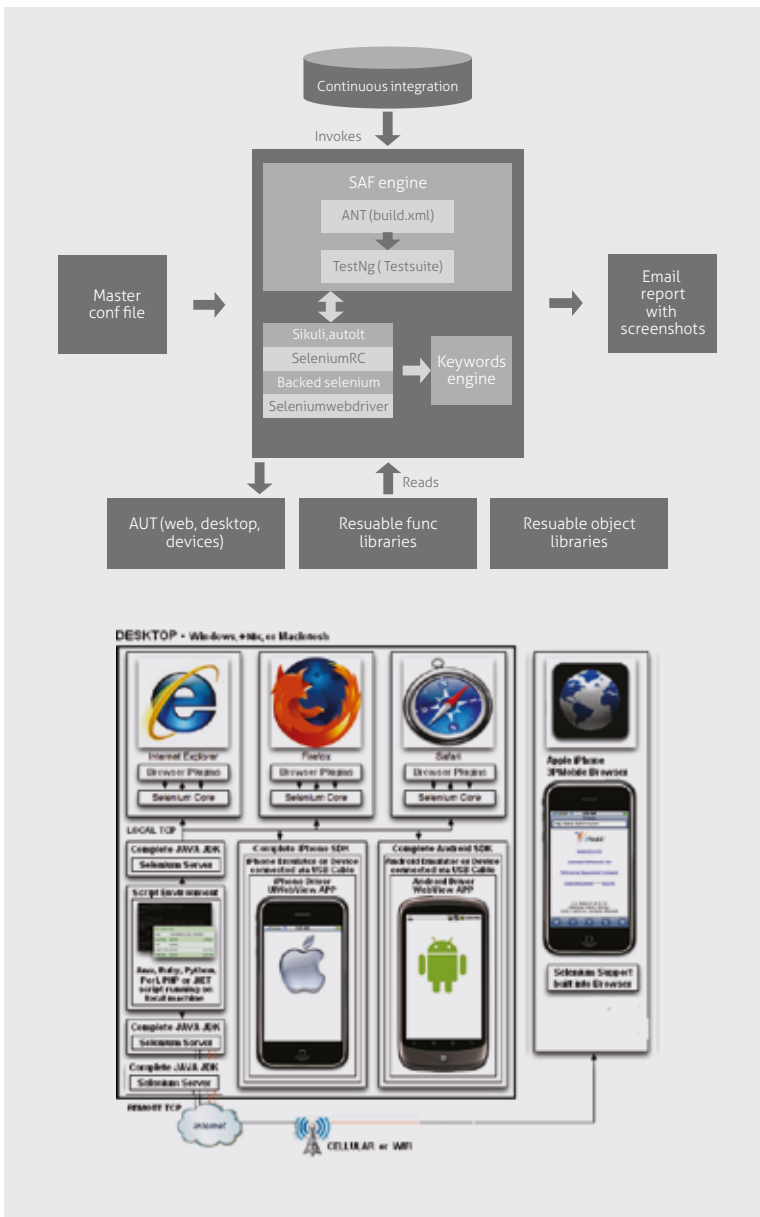
## SAF framework

SAF increases automation efficiency by minimizing initial coding effort. It is a script-less framework used for test automation of web applications that are developed on .Net, Java / J2EE, AJAX. The framework provides a platform to implement data driven and Hybrid – keyword + data driven – framework by spreadsheet template. It can be used in your current automation project. SAF helps enterprises speed up testing using accelerators at the test design layer while keeping the automation suite flexible to interface with commercial tools, whenever needed. The test framework provides a comprehensive reporting dashboard for managing tests.

- Concurrent & remote execution
- Huge test data generator
- Java code generation
- Script-less framework
- Reusable functions
- Support DDT
- Object repository

Config file

Integration with testNG, DOM inspector

Testing scripts selenium RC

Sent email excel report HTML report

Integration with testNG, DOM inspector

Function library

## Key features

- Intuitive, user-friendly interface for creation and execution of test suites
- Robust, flexible and extensible framework and support test automation on diverse sets of web applications across domains
- Programmatic generation of functional test cases and test suites
- Integration for dynamic and flexible grouping of test suites
- Schedulers for test execution and test report mailing
- Enables users to perform functional, acceptance and compatibility testing for most web applications
- Automated HTML report generation and emailing of the same to all stake holders
- Detailed test execution results with consolidated summary and error snapshots
- Supports concurrent-related bugs detection

## Test Automation process



- Faster execution with Webdriver; provides a Hudson plug-in to perform in a continuous integration (CI) environment
- Supports UI automation with Sikuli
- Manages multiple execution VM environments to run the tests against a vast combination of browsers / OS
- Script execution, logging defect and tracking from QC
- Support for sequential and
- concurrent execution on various browsers
- Mobile web application automation on Android devices
- Selective test script generation for expert view, keyword view, and many more
- Reduced time-to-market
- Utilities for handheld device automation, SAF script generation, PDF reports

### Key benefits
- Built on open source tools / libraries / frameworks to reduce overall costs for customers
- Increases flexibility of time and resources
- Avoid redundancy on test execution
- Increases test coverage to enhance the quality and reliability of the end product
- Enables quick updates and shorter learning curve due to our high interaction with Selenium user community

## Success story

The customer is a leading rental car supplier to premium commercial and leisure segments of the travel industry. Mindtree is involved in development and testing of applications.

### Business challenge

- Understand the vast application and the domain quickly, without any proper artifacts
- Consolidate verification and validation activities to reduce dependency
- Share and reduce infrastructure costs; economically manage resources
- Create a flexible and scalable model in line with growing needs
- Standardize tools and follow a stringent testing methodology
- Reduce time-to-market and cost while maintaining quality and performance

### Test automation approach

- Identified set of complex, medium and simple test cases for each of the applications for our in-house Selenium Automation Framework (SAF) evaluation
- Identify regression set for automation - collaboration with business Analysts, statistical analysis of application logs for most used features
- Prioritize identified automation test-set based on business impact into core and functional regression test suites
- Prepare automation strategy and identification of SAF customizations required
- Develop reusable components, automated test cases, test data sets and parameterizations

### Benefits

- Reduced test data set-up time significantly by using automation scripts
- Leveraged CoE, which allowed comprehensive and variable testing needs
- Automated testing methods increased software quality and reliability; reduced defects and time-to-market
- Reduced manual regression test effort by 46% to increase coverage of product areas
- Reduced effect in cross browser testing due to concurrent execution of automated tests across browsers
- Reduction in release cycles for production releases and weekend outages
- Faster realization of ROI on test automation due to reduced automated test development time
- Multi-platform, device and technology testing using in-house frameworks

- Reduces test automation development phase by over 50% reduction
- High productivity
- Low maintenance cost
- Facilitates better communication between various stakeholders and developers, using tables for representing tests and reporting their results
- Reduces dependency on technically skilled resources

## Technology details

- Open source tools / frameworks / add-ons / and utilities which include: Selenium-RC, TestNG, Java and Ant developed on Windows operating system
- Browser support includes: Firefox (1.5+), Internet Explorer (6.0 onwards), and Google Chrome. Theoretically at least, any modern browser that supports JavaScript such as Safari (1.3+), Mozilla Suite (1.6+, 1.7+), Sea Monkey (1.0), Opera (8), Camino (1.0a1)
- OS support includes: Windows, Linux, GNU, Mobile (Android)

## About Mindtree

Mindtree [NSE: MINDTREE] delivers technology services and accelerates growth for Global 1000 companies by solving complex business challenges with breakthrough technical innovations. Mindtree specializes in e-commerce, mobility, cloud enablement, digital transformation, business intelligence, data analytics, testing, infrastructure, EAI and ERP solutions. We are among the fastest growing technology firms globally with more than 200 clients and offices in 14 countries.