

# Testing

Testing is an integral part of agile and lean methodology:

1. **Continuous Improvement:** Regular testing provides feedback that aids in constant product refinement, catching bugs early, and improving quality.
2. **Customer Satisfaction:** Testing ensures the product meets customer requirements and functions as expected, enhancing user experience.
3. **Risk Mitigation:** Testing identifies potential issues early, reducing the risk of major problems and saving time and resources.
4. **Collaboration:** Testing fosters better communication and understanding between developers and testers.
5. **Rapid Delivery:** Continuous testing supports Agile and Lean's emphasis on frequent, incremental software delivery.
6. **Built-In Quality:** In Lean, quality is embedded in the development process, so every piece of code is tested as it's developed.
7. **Adaptability:** Testing ensures changes made during the project don't negatively impact the system.

The Aras Test Automation Framework (TAF) is a framework for writing and executing automated tests for the Aras Innovator Platform included within Aras DevOps. It is a set of APIs that abstracts the complexity of the underlying testing frameworks used: Selenium, NUnit and TestRunner. TAF greatly reduces the brittleness of automated tests as the underlying browser and application technologies change. The goal of TAF is to absorb the changes made by, say, Google Chrome or Aras Innovator, such that tests written on one version for a piece of functionality continue to work on the next version of Aras Innovator for the same functionality.

TAF includes APIs for automated tests to cover the following:

- Web UI (Selenium)
- Integration (AML)

To support the demand for Continuous Integration and Continuous Delivery (CI/CD), automated testing increases an organization's ability to thoroughly test new functionality and applications as fast as they are developed. This framework is built to work with the Aras Innovator Platform to improve the development process's speed, cost, and quality.

TAF has a framework for writing web-functional and end-to-end tests that use the Aras Innovator Web Client like an end-user.

The following section details the steps for an individual contributor to make changes within the Local Development Environment and submit it for integration into the SDE.

