

# PROVIDING TEST AUTOMATION TO A MARKET LEADER OF ULTRASOUND MACHINES

## Overview

Philips is one of the largest global medical technology companies in the world and is advancing the world of imaging and diagnostic technology. The company is well-known for developing innovative technology, services and solutions that help advance both clinical therapy for patients and clinical process for healthcare providers. Philips Voyager Ultrasound platform is an age-old legacy platform that supports 90+ different ultrasound products. It undergoes multiple test cycles as part of sentence activity and involve significant manual testing.

The customer grappled with outdated testware libraries, limited automation (below 30%), and technology complexity. They required a substantial upgrade to their existing technologies, reducing test complexity, easing the learning curve for new engineers, and enhancing overall productivity while extending the product's lifespan

Within the CYFAST test automation accelerator, Cyient provides a robust solution: leveraging SpecFlow for test development, binding testware libraries, and seamless integration with CYFAST. This ensures enhanced reporting, traceability, and monitorability, streamlining the testing process for optimal efficiency and effectiveness. This also enables to execute test on a simulator as well as on real DUT in offline and location agnostic remote mode.

## The Challenge

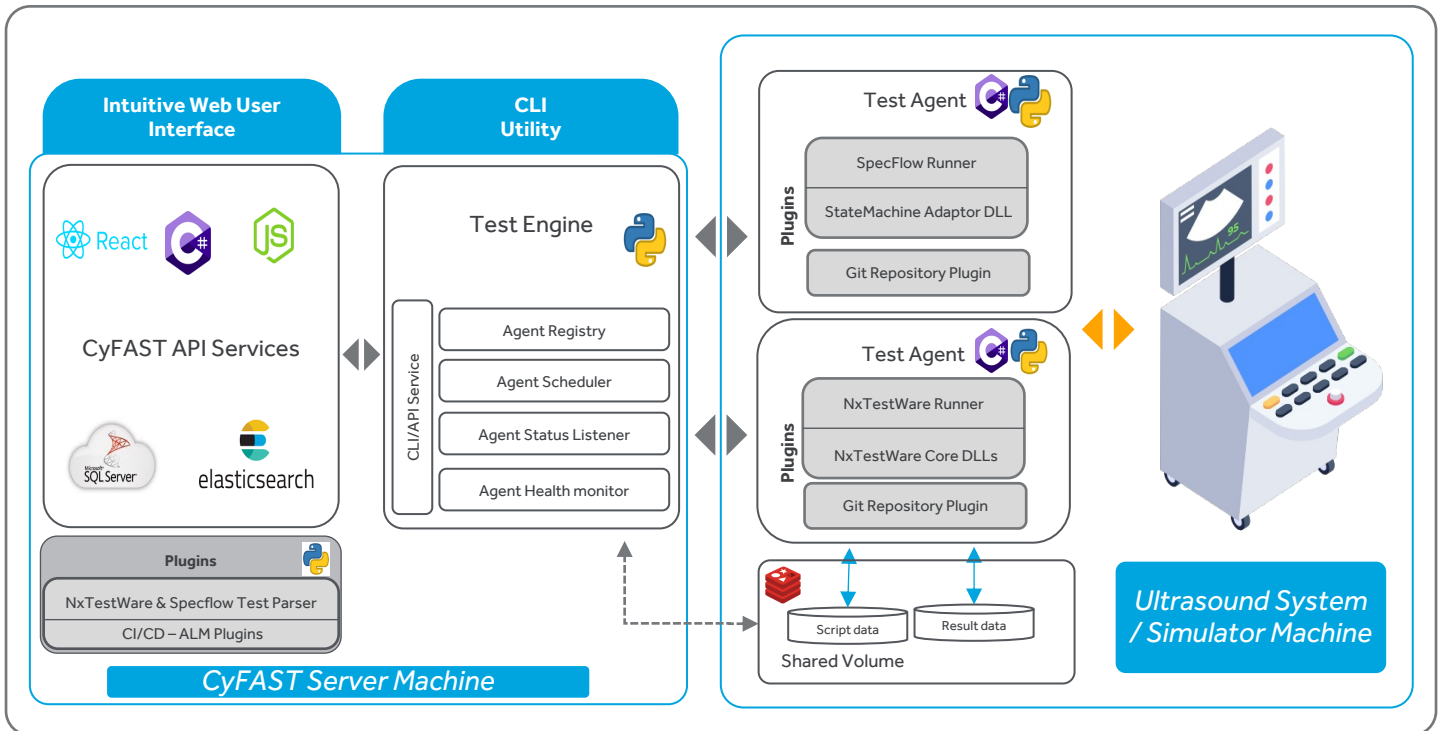
- The ultrasound software had complex state machines, which required in-depth knowledge of the system. This complexity was slowing down the process of test automation and making it difficult to maintain and extend their test suites
- Legacy controls and page elements were challenging to identify, especially in large and evolving software systems. This made it difficult to create and maintain automated tests, leading to delays and errors in the testing process.
- The test workflows and automated tests were based on CSV files, making it a challenge to trace and understand the tests' behavior and results. This lack of traceability hindered the ability to track and manage test cases effectively.

## The Cyient Solution

- The solution offered a transition to writing tests in a readable, traceable, and understandable format using Gherkin and SpecFlow. Behavior-Driven Development (BDD) techniques allowed to express test cases in plain language, making it easier for both technical and non-technical team members to understand and collaborate on test development.
  - To support the testing of complex state machines, Cyient developed a custom test agent capable of handling high-complexity procedural tests.
  - Adoption of a centralized hosted CyFast platform allowed for test configuration, execution, and monitoring across the entire organization.
  - The new solution provided the flexibility to customize test reports, making it easier to track test results and identify issues quickly. Custom reports enhanced the visibility and accountability of test outcomes.
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- The tight coupling between test libraries and environment setup made it challenging to switch between different test configurations and environments. This lack of flexibility was impeding the ability to scale test automation efforts.
  - When tests failed, debugging required a significant learning curve to identify the failure reasons and implement fixes. This added time and complexity to the maintenance of test suites.

## The Results

- The transition to BDD tests using Gherkin and SpecFlow improved the readability and understandability of their tests. This made it easier for team members to collaborate on test development and understand test outcomes.
- Customizable test reports simplified tracking and management of test results. This enhanced visibility and accountability in their testing process.



## DESIGNING TOMORROW TOGETHER

To ensure the software is thoroughly tested and dependable, having lengthy testing cycles, proficient test engineers, and allocating adequate time, effort, and funding have become imperative.

CyFast offers a brilliant cross-platform solution with capabilities for Distributed Testing, Customizable Reports, and End-to-End Traceability, ensuring high flexibility and scalability for customers' ongoing needs. We, at Cyient, are evolving CyFast towards "Future needs of Automation Testing with Cognitive Intelligence".

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Cyient (Estd: 1991, NSE: CYIENT) partners with over 300 customers, including 40% of the top 100 global innovators of 2023, to deliver intelligent engineering and technology solutions for creating a digital, autonomous, and sustainable future. As a company, Cyient is committed to designing a culturally inclusive, socially responsible, and environmentally sustainable Tomorrow Together with our stakeholders.

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