

CLIENT

Thomson Reuters is the world's leading source of intelligent information for businesses and professionals. With headquarters in New York, Thomson Reuters employs more than 55,000 people and operates in over 100 countries

TECHNOLOGY

Java

Python

Robot Framework

Jenkins

SUCCESS

1,900+ hours of testing per night

9,000+ test cases

18 months

90% code coverage

“Beaufort Fairmont was a key contributor to this project—we never would have met the deadline and reached these quality levels without their support.”

- DIRECTOR OF PRODUCT DEVELOPMENT,
THOMSON REUTERS HEALTHCARE



Beaufort Fairmont
AUTOMATED TESTING SERVICES™



CASE STUDY

Thomson Reuters Healthcare

The Challenge

In early 2011, Thomson Reuters' Healthcare division was tasked with creating a solution for hospitals to use for the quality measure component of meaningful use (MU) reporting. The solution would enable eligible hospitals to qualify for incentive payments from the Center for Medicare and Medicaid Services (CMS) by demonstrating their use of Electronic Health Records (EHRs). In addition, the product would allow hospitals to monitor the results of their quality measures and make needed changes—resulting in improved quality of care for patients.

The Thomson Reuters Healthcare team needed to launch a Meaningful Use product by Q1 of 2012. The measures engine would need to include the following features:

- ⚙ Allow facilities to submit data from their EHRs to the Thomson Reuters MU system
- ⚙ Calculate the MU measures from the submitted data
- ⚙ Allow facilities to review and attest to the quality and validity of the measures
- ⚙ Allow facilities to submit measures to CMS in the required format
- ⚙ All Personal Health Information (PHI) had to be securely stored and accessed

The Thomson Reuters Healthcare development team needed to develop and test the solution in a tight timeframe, ensuring a quality product that would assist hospitals in improving quality and enable them to qualify for government





incentives. In order to meet the deadlines and deliver the needed functionality, Thomson Reuters needed a partner with a unique set of skills—specifically, software engineers who specialized in creating test automation infrastructure and frameworks. In addition, they searched for a partner.

The Solution

Thomson Reuters partnered with Beaufort Fairmont to integrate the testing process into the construction phase of the product using Scrum. This approach ensures that testing drives development—no code is written without a failing test. For example, as the engine was being built, tests were already in place. Each component of the system was built to pass automated tests cases resulting in a full, comprehensive test suite of both white-box and black-box test cases.

9,000 test cases were created in eleven months by a small team, comprised of two software engineers, one full-time quality assurance professional, one part-time quality assurance professional and one Beaufort Fairmont Automation Engineer. The team utilized open source tools (RobotFramework, Java, HtmlUnit, AspectJ, Jenkins) to create an automation solution that performs over 1,921 hours (or 11.52 months) worth of what would otherwise be manual work—**every night**. The test-driven approach resulted in over 90 percent code coverage.

The Thomson Reuters team is notified every morning if any test fails. The automation architecture allows the team to drill down to the issue and resolve the problem quickly.

The Results

Working together, Beaufort Fairmont and Thomson Reuters launched the solution ahead of schedule, in December 2011 with the full feature set, plus a reporting solution and a Web application with a user interface. Benefits of the solution include:



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- ⚙ Every three to seven days the automation pays for the cost of the labor used to create and maintain it.
- ⚙ Every developer has the ability to run any test case locally on their machine.
- ⚙ Approximate code coverage for the project is over 90 percent.
- ⚙ Approximate percentage of manual tests is less than 10 percent of all test cases.

Thomson Reuters Healthcare has since partnered with Beaufort Fairmont to provide training in Test Driven Development and Continuous Integration for its software engineers for all teams across the Thomson Reuters Healthcare division. In addition, the initial automation project was so successful that automated testing with the Robot Framework has now been implemented across all of the Thomson Reuters Healthcare development teams.

ABOUT BEAUFORT FAIRMONT

Beaufort Fairmont is based in Cary, North Carolina, USA. We work with clients across the United States and in Canada to support, implement, and guide test automation and DevOps efforts. Learn more at beaufortfairmont.com.

CALL US TODAY AT **1.984.244.2313** TO LEARN HOW YOU CAN TAKE YOUR SOFTWARE TESTING PROGRAM TO THE NEXT LEVEL.



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