

# Responsible Testing Helps a Leading Construction Company Achieve 90% Test Coverage

## Summary

Persona oriented testing strategy of the leading software provider for engineering and construction companies, in partnership with Trigent, enables architects, engineers, contractors and operators to seamlessly track and manage complex projects.

## About the Client

Client's industry-leading Project Information Management (PIM) software streamlines communication, manages files, and simplifies construction administration. Their software is used by over 122,000 users in more than 1,200 firms across the world. Their software products provide project teams with a single view of the construction project by indexing information wherever it resides and exceptional document control. It streamlines communication, manages files, and simplifies construction administration for architects, engineers, contractors, and owners. The goal is to reduce the amount of time spent on administrative tasks, streamline project workflows, and power real-time collaboration for project teams.

## Project Details

### Scripting Languages:

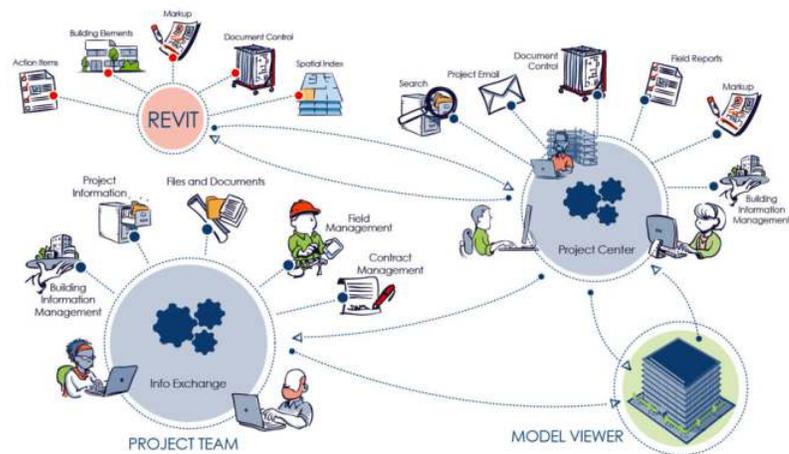


- Migrated from legacy Delphi to modern Python Automation scripts
- 40+ AWS Cloud instances for different software configurations

### Test Management & Reporting:

- Test Trail for Test Management
- JIRA for Creating stories & Reporting bugs
- Confluence for Daily Reporting & Maintaining automation details
- Slack for project Communication & coordination
- Soap UI & Postman for API testing
- Groovy & Javascript

## Background



Stakeholders in construction projects use a variety of software products and tools relevant to their work. The client's product interfaces with these 3rd party software using Connectors. The client maintains a library of connectors that is central to powering the single view streamlined experience. New connectors are added to the library and existing ones upgraded as they continue to add support for new products or enhanced variants of existing products. Compatibility with legacy OS and 3rd party software assures investment protection for its customers.

## Business Challenges

Quality testing for a new version rollout or for new feature release in the Project Management software requires that it be tested across all permutations and combinations of the release with the 3rd party software that their customers are likely to use. Anticipating and designing test cases for interoperability and version compatibility proved to be a challenge. The client needed a solution that ensured the maximum test coverage while minimizing the time to market.

“They are always prepared and collaborate with the in-house dev team to improve product quality. Trigent is very professional, focused on business outcomes, and data-driven. Thanks to Trigent, our last release with many anticipated integrations was successful and on time.”

## Trigent Solution

- Trigent drew up a detailed compatibility matrix for the different versions of the Software, the 3rd party products that are supported, its versions and associated constraints or limitations was created. Dependency on the version of the operating system, browser and related services added a level of complexity that needed to be covered.
- As part of its **Responsible Testing principle**, the exercise identified not just the dominant scenarios currently in use, but to also potential use cases that their end customers are likely to encounter.
- Trigent’s Real Estate domain expertise played a pivotal role in detailing the various personas (Architects, Engineers, Contractors, Operations), their habits and preferences. The product combinations applicable to different personas and end use scenarios were identified and classified.
- Tests were designed keeping the context of end users behavior in different situations. These test cases needed to be adapted for all the different product combinations used along with the client’s product.
- Trigent created a well architected AWS Cloud environment with multiple instances for every possible product combination. This ensured the integrity and accuracy of the QA process and allowed for rapid regression tests to be executed when needed.
- Test Automation ensured maximum test coverage and minimized execution time over time. It also optimized the number of AWS Cloud instances resulting in direct cost savings. These resulted in reduced infrastructure costs and fewer testing resources.

## Client Benefits

- Persona based testing identified failures for a specific class of users, caused by changes elsewhere in the product
- Reduced AWS Cloud instances by **42%** - Direct reduction in infrastructure costs
- Automation & Regression testing reduced time to market by **over 70%**
- **90% test coverage** with just 400+ test cases, a **33% improvement**
- Defect Escape Ratio (DER) of **less than 1.5%**

## About Trigent

Trigent is an early pioneer in IT outsourcing and offshore software development business. We enable organizations to adopt digital processes and customer engagement models to achieve outstanding results and end-user experience. We help clients achieve this through enterprise-wide digital transformation, modernization, and optimization of their IT environment. Our decades of experience, deep domain knowledge, and technology expertise delivers transformational solutions to ISVs, enterprises, and SMBs.

We offer end to end consulting services, design, development and managed services across Infrastructure, Cloud, Mobility, BI, Analytics, Product Engineering, QA & Testing, IoT, Big Data, and Artificial Intelligence.