

Case Study

Accelerating Test Cycles

GenAI-Powered Test Case Generation for Clinical Research

Summary

A global leader in cloud-based technology solutions for clinical research faced agility related challenges with respect to test case creation and coverage. Sonata's GenAI based solution resulted in 40% faster test cycles on client's research platform, which in turn will benefit more than 100+ stakeholders like business analysts, product owners, testers, and developers involved in the various clinical research products.

Client Overview

A global leader in cloud-based technology solutions for clinical research in the life sciences industry. With an annual revenue of over a few billion dollars, the client provides software platforms for managing clinical trials and research data.

Pressure Points

Long duration for the creation of test cases by Business Analysts, Product Owners & Testers	Suboptimal test coverage due to occasional oversight of relevant test cases
Absence of a streamlined solution for generating unit and functional test cases and code comments	Need support across multiple programming languages and integration with third-party tools like Jira

Solutions

Sonata's solution includes implementation of client specific GenAI Framework & a few agreed upon use cases on the AWS landscape. Some of the implemented GenAI Framework modules include:

Responsible AI	Context Initialization/Session Management	Prompt Validation	Orchestration/ Execution Manager/Agent	Prompt Builder
Skill Registry	LLM Registry	LLM Services	App configuration	Authorization Module

Below AWS services were extensively used to implement both framework & use cases:

Bedrock service for Gen AI response	Lambda service for creating framework components	RDS PostgreSQL is used as Database	Amazon Comprehend for RAI purposes
AWS Gateway for managing the endpoints	IAM roles and policies	AWS Cloud Formation for infrastructure automation	AWS Cloud Watch for observability

Results that Speak Volumes

Sonata's AI-powered test case generation solution accelerated the client's clinical research software development lifecycle, ensuring faster time-to-market and improved competitiveness. Additionally, the solution benefited over 100 team members in the clinical research department.

70-80% accuracy of generated acceptance criteria	>90% Test coverage
Overall Efforts Reduced (initial success) <ul style="list-style-type: none">• Per test case creation – 4hrs to 2.5 hrs• Per test script creation – 8hrs to 5 hrs	Reducing the test cycle time by 40%

Implementing Sonata's AI-powered test case generation solution across all clinical research products is projected to yield \$1 million in annual savings for the customer. This is attributed to decreased tester efforts and enhanced testing process efficiency.

The diagram consists of four light blue rounded rectangular boxes arranged in a 2x2 grid, each containing a benefit of test automation. The top-left box states '40% faster test case generation'. The top-right box states '50% reduction in test related efforts'. The bottom-left box states 'Improved test case accuracy & test coverage'. The bottom-right box states 'End-to-end process automation from user-story to generation of test scripts'.

- 40% faster test case generation
- 50% reduction in test related efforts
- Improved test case accuracy & test coverage
- End-to-end process automation from user-story to generation of test scripts