

# AI-Driven Software Development & QA Automation for SHD

Transforming SHD's EcoroWeb Platform with Agentic AI Development & Intelligent QA



## About SHD Solutions GmbH

SHD is a leading software specialist for the furniture and kitchen retail market. The company delivers comprehensive ERP and planning solutions—from MHS, Cogito, and SHDecoro to warehouse logistics, POS, finance and HR systems—supporting digital transformation. As a proud member of the GENII Software Group, SHD primarily serves clients in the DACH region, benefiting from international collaboration and resources within this European software holding.



**Software Provider  
(Furniture & Kitchen  
Retail)**



**> 1.000  
employees**



**8 Team  
members**



**Playwright, TypeScript,  
GitHub Actions  
& more**

## Challenge

SHD set out to modernize their long-standing desktop solution into a future-proof web application – without slowing innovation or compromising quality. SHD needed not just development help – but a partner capable of using AI as an engineering multiplier across the entire SDLC. They faced two critical challenges:

### Architecture Modernization

- Migrate a complex desktop system to a modern web platform
- Build a clean, modular, AI-friendly architecture that would accelerate development
- Enable fast onboarding and knowledge transfer for distributed teams

### Quality at Scale

- Establish a scalable, automated testing framework for UI & API
- Reduce manual QA effort while increasing test coverage
- Ensure test cases were readable by business stakeholders (BDD)
- Maintain CI/CD stability and eliminate test environment inconsistencies

## Solution - AI-First Engineering across Development & QA

K&C delivered a full-stack, AI-accelerated engineering setup that fundamentally changed how SHD builds software.

### AI-Driven Software Development

To modernize the core application, we designed a Domain-Driven, module-based architecture optimized for AI collaboration:

- Modular, reusable components
- Standardized templates and coding patterns
- Clear architectural guidelines that AI can follow
- AI-assisted code generation for repetitive tasks
- Fast onboarding for new developers

This AI-friendly architecture allowed the team to move from slow manual coding to “prompt, generate, review, refine” development.

Once the first modules were built, subsequent modules could be developed significantly faster thanks to structural consistency.



"The modular AI-friendly architecture gave us development clarity we never had before. After the first modules, the acceleration was immediate."

**Moaz Elhefnawy, Senior Frontend Developer**

## Solution - AI-Powered QA Automation (UI + API + BDD)

We built a modern, scalable Test Automation Framework using:

- ✓ Playwright
- ✓ TypeScript
- ✓ BDD (Gherkin) for business-readable scenarios
- ✓ AI-generated step definitions & abstractions

### AI accelerated every layer of the QA architecture:

- Automatically created reusable step definitions
- Generated API testing layers from Swagger
- Suggested fixes for CI pipeline failures
- Built Page Object Model structures at high velocity
- Abstracted 35 API endpoints into 17 robust services
- Enabled clean separation of UI vs. API tests



"As a QA Engineer in the age of AI, I have moved from being a writer of test scripts to an orchestrator of automated ecosystems."

Ahmed Abdelgawad, QA Architect

47

automated scenarios

35

API endpoints covered

18

UI components modeled

10

parallel workers



## Success Story

In just a few months, K&C helped SHD achieve:

### MVP Delivered & Validated

A fully functional MVP was delivered in a short timeframe and received excellent feedback at SHD's forum event in Germany, validating both the architecture and the AI-driven approach.

### Scalable, AI-Friendly Architecture

SHD now operates on a modular, DDD-inspired architecture that accelerates development, simplifies onboarding, and enables developers and AI tools to collaborate efficiently.

### Complete Automated QA Framework

K&C delivered a modern QA automation framework with 47 scenarios, 18 UI components, and 35 API endpoints, fully integrated into CI/CD with parallel execution and robust debugging tools

### Significant Time & Efficiency Gains

AI-assisted coding drastically reduced engineering effort – from framework setup to BDD implementation – transforming the workflow into “prompt, generate, review, refine” and enabling accelerated delivery across teams.

## Why K&C?



**AI-Driven Engineering Excellence:** We embed AI into every engineering discipline – from architecture to QA – ensuring intelligence, speed, and maintainability.



**Enterprise-Ready Delivery:** We build systems that scale: modular, structured, clean, and ready for AI-assisted collaboration.



**Proven Agentic Coding Approach:** Our combination of developer expertise + AI tooling reduces delivery time dramatically, without sacrificing quality.



“Facing a major redevelopment with thin resources, we turned to K&C for their 'Agentic First' expertise. They delivered top-tier design and automation while helping us architect our future. Their speed and quality are so high that our engineering now outpaces our product requirements. They aren't just developers, they are high-velocity partners.”

**Ryan Bryers, CTO at SHD**

## About Krusche & Company

With over 26 years of experience, K&C is a premier IT outsourcing partner specializing in AI-driven development and AI enablement. Our team of 180+ IT experts across 6 global locations provides flexible team extension and managed delivery hubs to scale your digital capabilities. As an ISO-certified provider, we deliver high-performance solutions in cybersecurity, cloud development, DevOps, and beyond. From agile software engineering to advanced AI coding, we combine technical excellence with certified security to drive your business forward.

