Automating Test Case Generation with AI

Transforming healthcare software testing through intelligent automation–converting requirements into compliant, traceable test cases seamlessly integrated with enterprise toolchains.

The Challenge: Manual Testing Bottlenecks

Regulatory Complexity

Healthcare software must navigate intricate regulatory frameworks including FDA guidelines, IEC 62304, and multiple ISO standards. Each requirement demands precise documentation and traceability.

Manual Burden

QA teams invest countless hours manually converting specifications into test cases, verifying compliance, and maintaining traceability across disparate tools–significantly slowing product development cycles.

This manual approach limits scalability in a domain where precision isn't optional–it's mandated by law.

Why Healthcare Software Testing Is Different

Diverse Data Formats

Requirements arrive in PDF, Word, XML, and proprietary markup–each requiring interpretation and standardisation before testing can begin.

Compliance Mandates

Every test must align with FDA, ISO, and IEC standards, with full audit trails demonstrating requirement-to-test traceability.

Domain Complexity

Healthcare specifications contain highly technical, domain-specific language that requires deep understanding to translate accurately.

The Cost of Manual Processes

60%
Time Spent
Of QA resources consumed by manual test case creation and maintenance

3x
Longer Cycles
Product development timelines extended due to testing bottlenecks

40%
Error Rate
Higher risk of compliance gaps from manual transcription and tracking

These inefficiencies don't just slow teams down–they create compliance risks and limit the pace of innovation in healthcare technology.

Our Objective: Intelligent Test Automation

> Build an AI-powered system that autonomously generates test cases from requirements and specifications, reducing manual effort whilst ensuring compliance, scalability, and seamless integration with enterprise toolchains.

This isn't about replacing QA expertise–it's about amplifying it, freeing teams to focus on strategic testing whilst AI handles the repetitive, time-consuming work of test case generation.

Solution Capabilities

01

Automate Test Case Generation

Convert natural language and structured specifications into comprehensive test cases and datasets across multiple formats–PDF, Word, XML, and proprietary markup.

02

Understand Complex Requirements

Accurately interpret healthcare-specific regulations and domain-heavy specifications using advanced natural language processing trained on medical and regulatory content.
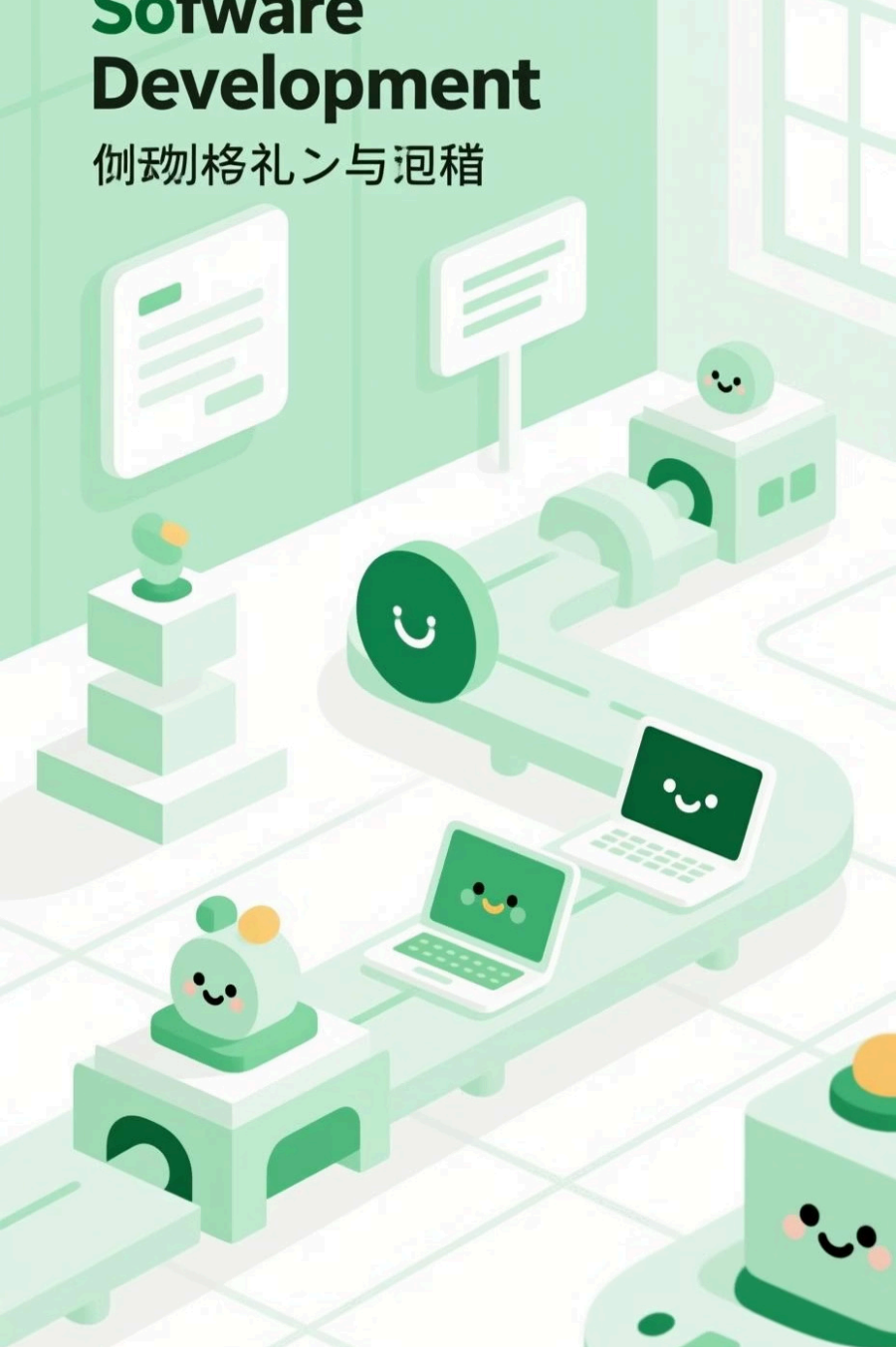
03

Integrate with Toolchains

Seamlessly connect with ALM platforms including Jira, Polarion, and Azure DevOps, maintaining existing workflows whilst adding intelligent automation.

04

Ensure Compliance & Traceability

Support FDA, IEC 62304, ISO 9001, ISO 13485, and ISO 27001 standards with complete, auditable requirement-to-test traceability throughout the development lifecycle.

How the System Works

Ingest Requirements
System processes specifications from any format

AI Interpretation
Advanced models understand context and compliance needs

Generate Test Cases
Automatically create compliant, traceable test documentation

Deploy to Tools
Push directly into your existing ALM platform

Powered by Google AI Technologies

Core Intelligence

- **Gemini**: Advanced language understanding for requirement interpretation
- **Vertex AI**: Scalable ML infrastructure for model training and deployment

Data & Analytics

- **BigQuery**: Powerful analytics for traceability and compliance reporting
- **Firebase**: Real-time collaboration and synchronisation

Enterprise Integration

- **Agent Builder**: Custom AI agents for toolchain integration and workflow automation

This technology stack provides enterprise-grade security, scalability, and the sophisticated AI capabilities needed to understand complex healthcare requirements.

Made with GAMMA

GDPR-Compliant Proof of Concept

Privacy by Design
Built from the ground up with GDPR compliance, ensuring patient data protection and regulatory alignment across European markets.

Scalable Pilots
Ready-to-deploy PoCs demonstrate solution capabilities whilst maintaining full compliance with data protection regulations and healthcare privacy standards.

Rapid Validation
Prove value quickly with pilot programmes that showcase time savings, accuracy improvements, and seamless integration with your existing infrastructure.

Transform Your Testing Workflow

Reduce Manual Effort
Free QA teams from repetitive tasks

Accelerate Cycles
Bring products to market faster

Ensure Compliance
Maintain audit-ready traceability

Scale Confidently
Handle growing complexity effortlessly

Ready to revolutionise your healthcare software testing? Let's explore how AI-powered test automation can transform your development process whilst maintaining the rigorous compliance standards your organisation demands.