STATEMENT OF DIRECTION:
Leveraging Artificial Intelligence for Test Data Automation

Purpose

This document is intended to communicate GenRocket's strategic direction for incorporating Artificial Intelligence (AI) and Machine Learning (ML) technologies into its *Test Data Automation* platform to current and future customers as well as business and technology partners.

Mission Statement

Underpinning everything we do at GenRocket is our mission to innovate groundbreaking technology that elevates the way enterprise software is developed and tested to new levels of quality, performance, and efficiency.

Our Approach to Innovation

At GenRocket, technology innovation is enabled by a modular, component-based architecture that allows new technologies to be rapidly and seamlessly integrated into our platform. This has allowed GenRocket to lead the industry in the volume and variety of synthetic data generators and output formatting options. It has also allowed for the addition of production data subsetting and synthetic data masking into the same platform. And it has enabled continuous improvements in performance, scalability, and security throughout our 10-year history.

Market Demand for AI and ML

The market demand for AI and ML solutions has never been stronger. AI technology is being operationalized across many enterprise environments from new product development to predictive analytics and business intelligence systems. Given this high level of interest, GenRocket is routinely being asked for its current position and strategic direction with respect to AI and ML. This document articulates our strategy for implementing AI technology across multiple dimensions of our platform.

The 3 Pillars of AI/ML Innovation

GenRocket has identified 3 broad categories for incorporating AI into its *Test Data Automation* platform. They include strategies for directly improving our platform and the business processes associated with our solution. They also include ways the platform can be deployed by our customers to improve the value of their own AI and ML solutions. We call these categories our "3 Pillars of Innovation".

Pillar 1

Improving Our Platform

Replace manual user interactions with automated processes

Automated assignment of data generators based on a target data profile

Data profiling for PII/PHI discovery and learning statistical data distributions

Pillar 1: Improving Our Platform

The first pillar describes how AI can be integrated directly into our platform, either by new product development or by leveraging existing AI technologies. We already use *Intelligent Automations* to streamline many user interactions. One example is a recent enhancement called *G-Families*. It identifies families of related data tables and simplifies and automates the creation of *Test Data Cases* that generate synthetic data based on those tables. We will use AI technology to add significantly more intelligence to the way GenRocket models and designs synthetic data to replace many manual user interactions with automated procedures.

Next, we plan to integrate data profiling technology into our system to dramatically improve the speed and accuracy of data generator assignment. For some applications, generator assignment & tuning can be a tedious process that requires an understanding of the data values for each data table. After profiling is implemented, generator assignment will be almost all AI-driven and based on the use of imported metadata that not only defines the data structure, but the profile for the target data environment as well.

In addition, data profiling technology will help automate PII/PHI discovery. This will mostly automate the process of finding and eliminating sensitive data with the use of GenRocket's *Synthetic Data Masking* process. The same data profiling scan will also profile the statistical distribution within the data so it can be synthetically reproduced with extremely high accuracy during the data generation process. GenRocket will deliver this capability as a seamless single platform solution.

Pillar 2

Improving Business Processes

NLP and AI Co-Pilots to simplify capturing test data requirements

Learned market-specific use cases for improving test coverage

Context-driven knowledge base and learning environment for customer support

Pillar 2: Improving Business Processes

The second pillar covers strategies for leveraging AI to improve business processes to simplify the user experience when operating the GenRocket platform.

Through the use of Natural Language Processing (NLP) and AI/ML technology, GenRocket will introduce and continuously enhance an AI Co-Pilot to assist users in formulating and configuring their test data requirements. This will provide an intelligent translator for developers and testers to capture their test data requirements and guide them through the design process for the precise synthetic data they need. GenRocket will take the process of self-service to a new level of simplicity and productivity.

As GenRocket's market coverage deepens in some industries and expands into others, we'll apply acquired knowledge of synthetic data best practices to build an Accelerator for the rapid deployment of market-specific use cases that maximize test case coverage. Today GenRocket is deeply engaged in healthcare and financial services markets and in position to apply real-world knowledge and best practices to optimize the use of *Test Data Automation* in those markets. We will leverage AI to learn and apply market-specific use cases to additional industry segments as well.

A third strategy for improving business processes with AI is building a context-driven knowledgebase and learning environment. Just as AI Co-Pilots can be used to automate the synthetic data design process, they can also enable self-help for onboarding, ongoing education, and customer support. AI can be leveraged to enrich the quality of GenRocket's educational materials and personalize the way users access and interact with them. All of the strategies in this pillar are intended to improve the user experience with our platform and enable high value outcomes from its deployment.

Pillar 3
Improving Customer AI Deployments
Synthetic training data when no other source of data exists
Anomaly detection that requires controlled, conditioned data
Generate statistical database replica and amplify critical data patterns and signals

Pillar 3: Improving Customer AI Deployments

The third pillar of innovation identifies ways the GenRocket platform can be deployed to improve the AI and ML solutions our customers are building, now and in the future. It is widely understood that the single biggest hurdle for deploying AI at every level is provisioning high quality data for training ML algorithms. Without quality training data, the accuracy and reliability of AI tools is limited and error prone.

Today, GenRocket is an ideal solution for generating synthetic training data for greenfield applications, where no other source of data exists. With GenRocket, developers can model the data they need and generate controlled, conditioned synthetic training data in any volume, variety, or format. All they need is an understanding of the required data profile.

GenRocket is also able to design training data for predictive analytics applications that must identify and detect known anomalies or business rule violations, as is the case in a tax fraud detection system. Our system can accurately generate billions of rows of accurate training data based on a specification of those rules.

GenRocket will also integrate data profiling technology to scan data and learn its statistical data profile. The metadata from this scan will provide an accurate blueprint to generate a statistical database replica. Then GenRocket can be used to design and generate accurate training data, without bias, and with the ability to amplify the data patterns and signals most critical to accurate decision making.

GenRocket will also generate the data needed to test the AI models for negative testing, stress testing, edge case testing, regression testing, and more.

Collectively, these 3 pillars of innovation represent a comprehensive strategy for the integration of AI technology with GenRocket's platform to continuously enhance its value to customers. With its commitment to leveraging the power of AI, GenRocket will continue to lead the market with the industry's most advanced, scalable, and extensible platform for *Test Data Automation*.