Simatree Case Study:

Analytics Support for a Federal Law Enforcement Agency

The Simatree team supported a Department of Homeland Security Agency with allocating limited resources by developing analytical models, tools, and dashboards to drive policy execution through predictive analytics and increase the Agency's data-driven decision making.

Overview

To more effectively address significantly increased volume compared to historic numbers, the Analytics Division of a Department of Homeland Security (DHS) Agency needed to take a more data-driven approach to the allocation of its limited law enforcement resources. The Agency employed the support of Simatree resources to develop and maintain analytical models that would help to better understand the variations in current volume and its impact to law enforcement resources.

The Challenge

Simatree was brought on to support the Analytics Division of a DHS Agency responsible for helping form the development of enforcement improvement strategies and supporting continuous enhancement of business processes to execute those strategies. In a highly regulated and evolving environment, the Agency needed to develop a more data-driven approach to allocating limited resources to execute the mission. Through data collection and analysis, and technology and process improvements, the Analytics Division delivers tools, studies, and recommendations that assist the Agency with decision making and planning and understanding that the impact of not only current trends, but also potential policy changes on its resources. However, the Agency's most recent and current data was severely impacted by the COVID-19 pandemic, making it difficult to build predictive models and make real-time decisions on where best to deploy law enforcement resources across the nation.

The Solution & Benefits

Simatree developed and maintained more than 10 analytical models, tools, and dashboards to assist the Agency in executing policies through predictive analytics. The Simatree team used platforms such as R, Python, Qlik, and Databricks to produce essential metrics and statistical models to drive decision making in the field and in the Agency's leadership office. Simatree also supported the building of a Discrete Event Simulation (DES) model to project and simulate future scenarios to assist the Agency in

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defining resource allocations and measuring impacts of international policy changes or global events. Additionally, Simatree developed and maintained the querying databases for multiple operational and reporting dashboards useful in enforcement operations. These dashboards play a critical role in defining target lists, reporting outcomes, and overseeing connections between different data sources.

In support of the Agency's multi-year strategic plan, Simatree developed dashboards to support leadership's decision making through predictive analytics and operational statistics. The Simatree team designed the ADP a forecast to use ten years of collected data to inform the strategy and planning needed to accurately manage future needs. This information assisted the Agency in conversations with Congress to better determine future funding requirements.