



Effectual: HawkEye 360 Modernizes Satellite Data Management with AWS

Case Study

HawkEye 360 Sky-High Insights: Modernizing and Democratizing Satellite Data Management with AWS Data Lake Architecture



About HawkEye 360

HawkEye 360 ("HawkEye") is the world's leading radio frequency (RF) data analytics company. Using a novel commercial satellite constellation to identify, process and geolocate RF signals, the company fuses its unique satellite data with supplementary data sources to create powerful analytics products. Commercial, public-sector and international entities leverage HawkEye's services for maritime domain awareness, defense planning, spectrum mapping, environmental ecosystem protection, and emergency beacon location, among other uses.

The Challenge

HawkEye was confronted with an escalating volume of siloed data across different teams and AWS accounts without a standardized access or tagging strategy. This led to data governance issues and limited the company's analysts' ability to access and query data independently. HawkEye sought an innovative solution that could handle varied data types from multiple sources, enable quick data analysis for valuable insights, and be accessible across the company irrespective of technical expertise.

The Project

Effectual began by documenting and designing processes to ensure that HawkEye's data is effectively captured, tagged and cataloged before it enters the new data lake. After assessing HawkEye's data files and sources, Effectual designed and built a data lake architecture for AWS via S3 and developed data and transformation processes using AWS Lambda functions and AWS Glue. AWS Lake Formation was used to govern the data lake and handle all data security and compliance requirements.

Effectual tagged and cataloged HawkEye's data and then built a custom web front-end that enables HawkEye's internal analysts to query data via a graphical interface while eliminating the complex need of writing queries against S3.

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The Result

In 10 weeks, Effectual delivered a minimum viable product for the data lake. The automated processes provided HawkEye with a reliable data source, surpassing data governance and compliance standards. This new solution reduced reliance on expensive data scientists and engineers, empowering HawkEye's data analysts to independently execute queries and retrieve data, leading to valuable insights for potential customer use cases. Consequently, HawkEye gained increased business agility and the capacity to introduce new products and revenue streams, significantly accelerating their ideation-to-product process.

AUTHOR: EFFECTUAL



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