

SATELLITE TRACKING & MONITORING USING ORBITSHUB ACCAT SYSTEMS

BY DIVYA KRISHNAMOORTHY

INTRODUCTION

With hundreds of satellites launched every year, in-space collisions and the creation of fast-moving fragments of space debris are becoming increasingly likely, threatening our continued human and technological presence in space. The 2020 year alone the International Space Station had to move three times to avoid potential collisions with the junk that is flying around the planet at speeds of 18,000 mph. In the first 67 space shuttle launches, 177 impacts were found in the windows. 45 of them were large enough to warrant a replacement window. 67% of the impact for shuttle during their 10 days missions back in those days.

Currently, in low Earth orbit, there are millions of pieces of debris any one of which could cause a major problem. That is enough to cause millions of dollars worth of damage or even loss of life. To make matters worse, every collision creates more debris producing a cascading effect.

Space debris threats are not only for satellites and ISS, but also for future space shuttle programs and our missions to anywhere in the universe. The problem, if ignored, could destroy all the satellites that orbit near the Earth, a loss that would be more acutely felt as humanity increasingly relied on space. Communication systems would fail; scientific instruments to study climate, or pandemics would become inoperable. The losses could be measured in billions of dollars & lives too.



Our ACCAT system could be used as a "Space Traffic Management" system and would be a great tool to the Satellite operators, International and National Space Agencies who are facing a higher risk of losing their satellites and missions due to collision with space debris. They need our solution because this will help them to automatically predict collisions and take actions based on our AI tools. Our solution saves their time and money, by providing advanced live monitoring, analytics, reporting, and alerts with automated predictions suggesting the next course of action to be taken.

THE TECHNOLOGY

Our Technology and Applications make it easier for our customers to track and monitor satellites, space debris, and asteroids. Our application provides better AI-enabled visual representation and has new features using the ACCAT system. This is achieved as the ACCAT system processes all the existing objects in space using those historical data. Those data will be used to build models using TensorFlow and Cloud ML which provides 2x more data-driven decisions, 3x faster execution, and 5x faster decision-making for tracking and monitoring activities. Our Company will achieve this by doing our innovative & progressive development with a great commitment from our team. We will also customize, develop or add features based on customer needs for better services. The state-of-the-art of our newest technology is the ACCAT system and the tracking solution which will be both qualitatively and quantitatively benefit the customer both cost and technology-wise. Following is our technology architecture,



Benefits

- Improved Space Traffic management
- Space Situational awareness
- Space debris tracking
- AI based Collision Prediction
- Automatic Collision control
- Real-time tracking and monitoring
- High Security- including AES256 Encryption, ISO 27001 Information Security Management System, SOC 2 Type II Compliant, HIPAA Compliant, EU GDPR Compliant, Secure server, SSL secured Web service with 3 factor authentication Restricted IP access option

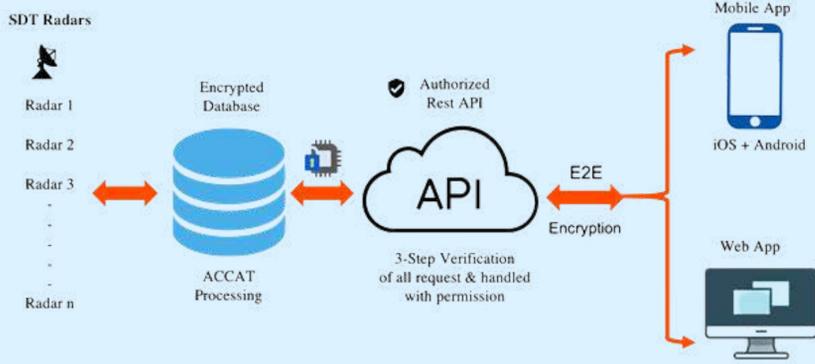
Our Customer Application Types

- Imaging and Earth Observations
- Weather Forecasting
- Satellite Communications
- Science & Explorations
- Technology Development
- Space Flight Management Services
- nsurance Providers and Regulators

Industry

- Media & Entertainment
- Government
- Defense
- Aerospace
- Academic

SDT Architecture



WHAT IS ACCAT?

ACCAT (Active Collision Control AI-enabled Technology) systems are our unique technology that uses both Artificial Intelligence and Machine learning tools to process our data thereby giving our tracking and monitoring services with advanced automation. This tool plays a vital role in providing collision detection and thus contributes automated possible solutions and predictions.