



SECURITY EXECUTIVE COUNCIL

A research and advisory firm

Solution Innovation Case Study: Enhancing People, Asset, and Brand Protection with Drones and Robotics

The Security Executive Council (SEC) Solution Innovation Partner (SIP) program evolved to help security practitioners expedite choosing a trustworthy risk mitigation vendor with confidence given the myriad of possible options in the marketplace. Proven Solution Innovation Practice Case Studies help to evaluate performance claims and differentiate security solution providers for business outcomes including risk mitigation, return on investment, and security assurance.

This robotic perimeter security case study offers a proven demonstration of how a Global Supply Chain Management Company is using Asylon's intelligent air and ground robotic solutions to mitigate risks, enhance safety, security, and asset protection; while improving agility, cost, and operational efficiency. The case study also examines how Asylon's 24/7 Robotic Security Operations Center (RSOC) is being leveraged for real-time risk/threat/vulnerability intelligence gathering and around-the-clock support. The primary intangible benefit the Global Supply Chain Management Company has seen is increased corporate brand equity.

This was validated by the Security Executive Council and the Global Supply Chain Management Company.

Risk Issues and Mitigation Opportunities:

The Global Supply Chain Management Company is responsible for billions of dollars in assets and revenues. Ensuring that customers can resiliently distribute their products in an effective, efficient, and timely manner enables world-class service level agreements. The Global Supply Chain Management Company security team was looking for an innovative solution for their perimeter security operations that addressed oversight of key risk mitigation opportunities including:

1. Enhanced visual security risk, threat, and vulnerability coverage in and around large distribution centers and warehouses with many potential access points.
2. Optimized autonomous support of security officers to mitigate a country-wide labor shortage.
3. Improved reliability for observing and reporting alarms, anomalies, and mitigation responses.
4. Improved brand value protection through more effective security response, asset protection, and risk management procedures.
5. Created a safer environment for employees and contractors by using robotic solutions rather than personnel to investigate security alarms.
6. Delivered value to shareholders by optimizing corporate security costs and prioritizing solutions that are scalable while providing an ROI.
7. Built a layered security solution to effectively protect people, assets, and stakeholder interests.
8. Created a flexible and repeatable process for detecting, investigating, reporting, and responding to alarms while lowering the liability risk of people (contractors, employees, first responders, visitors) in the process.



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Solution Requirements:

1. Automated drone system to include a battery swap capability for back-to-back security missions with less than 5 minutes of downtime. Note: All other drone-in-a-box systems have a ~40-minute downtime to fully charge by using an inductive charging system rather than battery swap.
2. 24/7/365 customer support.
3. Remote monitoring capability with real-time video feeds and tele-operable drones/robotics at near-real-time speeds (less than .5 second latency).
4. A dedicated Robotic Security Operations Center (RSOC) for remote monitoring and operations.
5. Automated remote software updates.
6. Consistently scheduled maintenance plan to enable system reliability throughout the length of the multi-year contracts.
7. OPEX costing structure.
8. A clear regulatory path to receive Beyond Visual Line-of-Sight (BVLOS) waivers from the Federal Aviation Administration.

Delivered:

Asylon's drone solution has been implemented across multiple Global Supply Chain Management Company facilities. Asylon's ground asset is exiting beta-testing and is set to scale across multiple Global Supply Chain Management Company facilities.

1. Full-service robotic perimeter detection, deterrence, and risk mitigation security solution to include hardware, software, remote operation, and monitoring, maintenance plans, on-site licensed drone pilots to comply with FAA regulations, and software/hardware upgrades.
2. Open platform software system with multiple smart sensor integrations for remote monitoring and alerting. Clear protocols were developed for pre-programmed responses to the alarms using the drone.
3. Asylon's DroneHome (the drone's base station) enabled:
 - a. Autonomous precision landing
 - b. Automated battery swap for rapid power regeneration (under 5 minutes for a complete cycle)
 - c. Environmental protection
4. Asylon's DroneDog system (in beta testing as of February 2022) included:
 - a. Boston Dynamics Spot platform
 - b. Asylon custom "PupPack" for connectivity, remote operation, and security payloads
 - c. Asylon custom "DogHouse" for environmental protection and recharging.
5. Flight recording and video management system for post-incident investigations.
6. FAA airspace requirements consulting and expertise to navigate complex requirements and chart a clearly defined path toward fully autonomous site operations.
7. Drone hardware upgrade as part of standard SLA across all sites resulting in:
 - a. ~20% increased flight time
 - b. Increased weatherization (light rain & snow)
 - c. 20x optical zoom
 - d. 720 EO / 640 IR



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Outcome and Benefits of Service Including ROI:

“Our company is innovating across the board. The security program is no different and has already seen significant changes. With all that’s going on in the world right now, if you’re not participating in the development of these programs and systems, then you are at a disadvantage. However, through our partnership with Asylon, we’re able to prioritize reliability, scalability, and upgradeability in the security technology space which allows us to better plan for the future.”

“Automated drones and robotics are an absolute game changer and allow us to address many of our requirements for detecting, deterring, and safely responding to potential criminal activity. These systems have already shown measured success at decreasing unwanted criminal activity and increasing safety. As we continue our partnership with Asylon, we are confident in the continued success. Asylon has been a tremendous partner as we innovate and continue to develop these innovative programs!”

-Director of Security, Global Supply Chain Management Company

1. End-user confidence in Security’s physical security program confidence rose from 3 to 8 out of 10.
2. More than 9,500 automated security drone missions across sites. The drone asset at a 200ft altitude can see approximately 10X the area that a guard can at 6ft altitude (eye level). The drone also patrols 5X faster on average than a security officer, thus covering more area at a faster rate.
3. More than 154 miles patrolled with the ground asset at one site in the first 79 days of the beta testing period.
4. A noticeable reduction in vehicle break-ins at deployed site parking lots.
5. Site #1 for quantitative analysis:
 - a. Experienced a 385% YoY mission count increase.
 - b. Responded to and cleared 819 security alarms on the property with the drone.
 - c. According to Crime Data collected through a public law enforcement database the crime index prior to Asylon deployment to deploying at Site #1 was 19.0. The crime index to date has been reduced to 16.6 indicating a 13% reduction in crime from August 2020 to August 2021.
 - d. The total flight hours are 1,130.5.
 - e. A success rate for autonomous precision landing on the DroneHome system greater than 90%.
6. A one-of-five-awarded-in-the-world BVLOS waiver that enables Operations Over People (OOP), Operations Over Moving Vehicles (OOMV), and Nighttime Operations while designating the Robotic Security Operations Center (RSOC) Analyst as the Remote Pilot In Command (RPIC).
7. The total success rate for autonomous precision landing on the DroneHome system across all sites and in all wind conditions is 94.8%.
8. Daily mission count average across all sites:
 - a. 2020 (starting date = first deployment date) = ~2.98 missions per day
 - b. 2021: ~19.1 missions per day
 - c. 2022: ~21.7 missions per day



SIP Case Study Authentication Process

This process was overseen by a Council Faculty member with 25+ years of experience in developing and leading people and asset protection programs as a trusted security advisor for global, multinational organizations. Client end-user authenticated February 2022.

Note: The Security Executive Council's Solution Innovation case study represent a snapshot in time to demonstrate a solution to a specific-organization's issue. End-user diligence, trial and measurement are strongly recommended for any contemplated risk mitigation activity.

A General Comparison of Competition

Client Service/Resource Attributes or Capabilities	Asylon YES/NO	Leading Ground Robot Company YES/NO	Leading Guarding Service Company YES/NO	Leading Security Drone Company YES/NO	Leading Drone-in-a-Box Company YES/NO
General Security Capabilities (GSC)	Yes	Yes	Yes	Yes	Yes
Daytime/Nighttime Vision (EO/IR)	Yes	Yes	No	Yes	Yes
20x Optical Zoom	Yes	No	No	No	Yes
24/7 Monitoring Services with Trained Security Analysts	Yes	Yes	Yes	No	No
Video/Data Collection for Incident Reporting & Investigations	Yes	Yes	Yes	Yes	Yes
Software Upgradability	Yes	Yes	No	Yes	Yes
AI/ML Classifiers	Yes	Yes	No	Yes	Yes
United States Origin	Yes	Yes	No	Yes	No
Aerial Asset (AA)	Yes	No	No	Yes	Yes
Less than 5 Minute Battery Downtime	Yes	No	No	No	No
20,000+ Automated Missions	Yes	GA only	No	No	No
Automated Alarm Response	Yes	GA only	No	Yes	Yes
Pre-Programmed Patrols	Yes	GA only	No	Yes	Yes
FAA BVLOS Waivers Received	Yes	No	No	No	Yes
FAA BVLOS Over People & Vehicles @ Night	Yes	No	No	No	No
On-Site P.107 Licensed Drone Pilots	Yes	No	No	Yes	Yes
60 Hours per Week of Operational Time	Yes	GA only	No	No	No
Trained Remote Drone Operators	Yes	GA only	No	Yes	Yes
Autonomous Precision Landing with a 94%+ Success Rate	Yes	No	No	No	No



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ASTM-Certified Safety Parachute	Yes	No	No	No	Yes
Ground Asset (GA)	Yes	Yes	Yes	No	No
Ability to Traverse Unstructured Terrain like Stairs or Rocks or Grass	Yes	No	Yes	N/A	No
Environmental Controlled "Home" Location	Yes	Yes	Yes	N/A	Yes
Remote Teleoperation & Live Monitoring	Yes	Yes	No	N/A	No
Trained Security Robotics Operators	Yes	No	No	N/A	No

See other case studies and learn more about the SIP Program here:

https://www.securityexecutivecouncil.com/about/solution_innovations.html