

# PROJECT SUMMARY



## Bird Detection and Harassment System

**Client:** Jakarta International Airport (Soekarno-Hatta)  
(Contracted through IPS Securex Pte. Ltd.)

**Location:** Jakarta, Indonesia

**System:** Accipiter® NM1-F24D Radar Surveillance System,  
Accipiter® ADS-B System, HyperSpike® HS14RAHD™

### The Challenge

Operated by the PT Angkasa Pura II (APII), Jakarta's Soekarno-Hatta International Airport (CGK) is Indonesia's largest and busiest airport with traffic of over 65 million passengers and 447,000 aircraft movement a year (2018) utilizing three main runways. It has been well understood and documented that bird (avian) activity in and around airports poses a significant impact on aviation safety, with over \$1B of aircraft damage and disruption occurring annually in the US alone, as a result of aircraft bird collisions.

For many years bird strike incidents have been logged and reported routinely while wildlife hazard management personnel / biologists operate at most airports, it was only when US Airways flight 1549 miracle landing on the Hudson in January 2009, did "bird-strike" become a household word. Many airports have used randomized and time-managed harassment measures, which have led to bird habituation and proved to be less than effective. The airport determined that understanding bird activity would enable a more targeted approach to bird harassment, however, understanding the behavior of birds 24/7/365 in varying light and weather as well as monitoring birds outside of the airport perimeter was impossible without the use of avian radar technology. As a result of these challenges, CGK, through IPS Securex Pte. Ltd., awarded a contract to Accipiter for the deployment of our state-of-the-art avian radar surveillance system integrated with high powered, steerable acoustic hailing devices (manufactured by USSI).

### The Solution

Accipiter is the only company whose avian radar systems have been tested and validated by the US Federal Aviation Authority (FAA) and the US Department of Defense. The testing of Accipiter's 3D avian radar systems was instrumental in development of the FAA's Advisory Circular 150/5220-25 "Airport Avian Radar Systems" and our systems have been successfully deployed at commercial and military airports in North American, Asia and Europe.

CGK has successfully deployed an Accipiter® NM1-F24D avian radar system, along with two HyperSpike® HS14RAHD™'s, at strategic locations across the airport. The Accipiter® NM1-F24D is our 3D avian surveillance radar system. Utilizing proprietary digital radar processing the system can track over 500 birds simultaneously, delivering 3D target trajectories for each bird (long, lat, altitude, speed, size and heading), tracking small targets (Starling sized birds) at 2km and larger targets (Canada Goose sized bird) at 7km.

The radar surveillance system is complimented by the addition of Accipiter's ADS-B system, which provides tracking and identification of cooperative aircraft, enabling monitoring of birds (or drone) aircraft interaction. All bird and aircraft track data is stored within the system's Radar Data Manager (RDM) and served up to the user through an Accipiter® live Common Operating Picture (COP), which displays tracked bird movements on and off the airport and enables operators to steer and activate the acoustic hailing devices to areas of high bird activity for targeted and more effective harassment.

### Accipiter's Radar Intelligence Network™ Platform Technology

Accipiter offers several carefully engineered systems to address your particular aviation safety and security problems, and they are all built on our patented and game-changing Radar Intelligence Network™ (RIN) platform technology.



**Project Finish:** 12/2019  
**Support Commencement:** 12/2019  
**Support Services:** Ongoing



**Market:** Aviation Safety and Security



**Type of Contract:** Supply, Commission and Support



**Client Contact:** Available upon request



Accipiter® NM1-F24D 3D Radar Surveillance System



HyperSpike® HS14RAHD™, Steerable acoustic hailing device for target bird harassment

(continued on reverse)

# PROJECT SUMMARY



The RIN architecture ensures your system can easily adapt and grow with your changing threats and needs. Our novel approach to wide-area, real-time detection, tracking, post processing, and display coupled with on-the-fly and interactive analytics applied to historical target data sets us apart from any other radar systems provider, by giving you unprecedented situational understanding and decision support. Our RIN allows any number of sensors to seamlessly connect over any TCP/IP network to our patented M<sup>3</sup> Target Information System which forms the heart of all our delivered systems. And because the RIN was engineered to be radar agnostic, the right radar sensor(s) can be selected for your problem.

## Surveillance-to-Intelligence™ (S2I) Tools

Accipiter provides a suite of easy-to-use S2I tools, giving users with different roles or missions the situational understanding they need to be more effective at performing their duties. The Accipiter® Radar Common Operating Picture (COP) and ThreatViewer™ give watch standers and dispatchers a real-time map-view of target tracks from all sensors with built-in, 24-hour rapid replay along with alerts in response to detected threats of interest. Our tablet-based Mobile Response COP gives responders in vehicles a user-centric display, allowing them to more easily put their own eyes on live targets of interest so they can take action.

Our strategic S2I tools interactively or on-the-fly rapidly mine the TIS's historical target data to give analysts understanding of target activity patterns; and managers specialized reporting with metrics and key performance indicators (KPIs) that allow them to better manage and allocate resources to mitigate risk. The Accipiter® Track Histories Viewer delivers spatial patterns of tracks around your aerodrome every hour, while the Accipiter® Target Analyzer Software (TAS) allows the analyst to generate a variety of temporal and spatial target activity distributions.

## About Accipiter

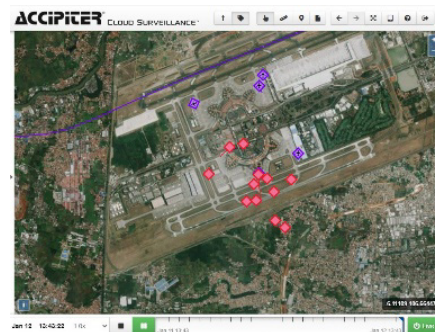
Accipiter Radar is a North American company that develops, sells, and operates high-performance Radar Intelligence Networks™ that monitor the behavior of uncooperative targets such as small vessels, low flying aircraft, drones / UAS, people, vehicles and birds, as well as distributed phenomenon such as weather, waves and ice. Accipiter is a world leader in extracting actionable intelligence from multiple surveillance sources. Its suite of Surveillance-to-Intelligence™ (S2I) analytical user apps provides both tactical (real-time) and strategic (historical) situational awareness for 21st century safety and security applications.

Accipiter provide protection and security for governments, military, security agencies and commercial operators around the world including airports, military airbases, ports, waterways, critical infrastructure, remote mining facilities, LNG plants. Accipiter is a leader in radar surveillance for Beyond Visual Line of Sight (BVLOS) for commercial drone operations.

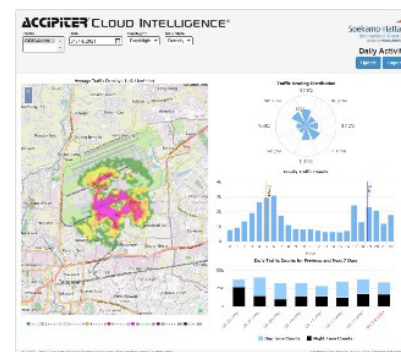
## Products Designed and Built to Exceed Expectations

Accipiter's family of products are designed for persistent detection and tracking of cooperative and uncooperative targets on the water, in the air and on the ground. 2D and 3D radar systems for fixed installation locations or for rapid mission deployment, connect with Accipiter's M<sup>3</sup> Target Information System and Surveillance-to-Intelligence™ tools to enable live tactical situational awareness and strategic analytical decision making through 24/7/365 all domain awareness.

Whether you are protecting your homeland through border enforcement, providing coastal surveillance or using surveillance to protect your critical infrastructure perimeter, increasing aviation safety through bird and drone activity monitoring or safety management, or protecting wildlife through wildlife hazard management studies, habitat management and active bird deterrent systems – Accipiter has a proven system for you.



Accipiter® Common Operating Picture (COP) at CGK



Accipiter® Daily Activity Dashboard at CGK

## CANADA

Accipiter Radar Technologies Inc.  
576 HWY 20 W  
Fenwick, ON L0S 1C0  
Phone: 905-228-6888  
Fax: 905-892-2249  
Mail Only: P.O. Box 939, Fonthill, ON L0S 1E0

Email: [sales@accipiterradar.com](mailto:sales@accipiterradar.com)

## USA

Accipiter Radar Corporation  
40 Centre Drive, Suite 300  
Orchard Park, NY 14127  
Phone: 716-508-4432  
Fax: 888-393-6421

Website: [www.accipiterradar.com](http://www.accipiterradar.com)

## PATENTS & TRADEMARKS

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