THE CHALLENGE
Unmanned Aerial System (UAS) low altitude operations for infrastructure inspection, precision agriculture, public safety, and other applications are typically below current manned aircraft surveillance coverage. There is a need for cost effective surveillance solutions that can relay data to the operator and other entities for tracking UAS, while augmenting the surveillance picture for Sense and Avoid (SAA).

THE SOLUTION
With much of the projected civil UAS missions occurring below 500 feet, the Automatic Dependent Surveillance-Broadcast (ADS-B) Xtend dual-band ADS-B receiver and relay can provide surveillance coverage to the surface for UAS tracking and local area surveillance. The small yet robust form-factor can be deployed as fixed infrastructure or as a mobile asset to provide roaming coverage. Networking options include both cabled ethernet as well as internal wireless cellular connectivity for maximum flexibility. Fusion of this local data with national NextGen surveillance data provides greater situational awareness than any other solution available.

FEATURES
Locally deployable sensor and relay for low altitude ADS-B coverage augmenting FAA surveillance

Full UAS tracking capability for within and BVLOS operations

Self-contained antenna, processing, and communications system with low size, weight, and power for easy installation or remote portable deployment

Undergoing validation testing as a component of FAA Pathfinder Initiatives for BVLOS operations

Designed to meet system safety requirements to include remote maintenance monitoring
INTEGRATING UAS INTO THE NAS

FAA SURVEILLANCE SOLUTION PROVIDER

Harris designed, built, and operates the world’s largest Air Traffic Control (ATC) surveillance data network in the world in the Federal Aviation Administration’s (FAA) Automatic Dependent Surveillance-Broadcast (ADS-B) network. This critical level network has over 650 ADS-B ground stations and links over 450 additional FAA surveillance radars and sensors. The Harris NextGen data is a synthesis of NAS-wide, real-time FAA system derived aircraft surveillance data. These sources include ADS-B data derived directly from the U.S. national ADS-B network being deployed by Harris; FAA en route and terminal secondary surveillance data; airport surface surveillance data from the FAA Airport Surface Detection Equipment-X Band (ASDE-X); Wide Area Multilateration (WAM) from FAA deployed WAM systems and flight plan data from the FAA host system.

INTEGRATED ADS-B XTEND SURVEILLANCE

Networks of ADS-B Xtend relays augment Harris’ existing NextGen Data. By strategically deploying ADS-B Xtends, existing gaps in ADS-B coverage are closed, ensuring low altitude surveillance of ADS-B equipped aircraft for UAS asset tracking and SAA systems.

From large scale systems to smaller scale regional systems, Harris integrates multiple surveillance technologies into a surveillance network that is customizable to meet UAS operator needs. ADS-B Xtend is Harris’ most recent step in developing the most comprehensive surveillance data set available.

For more information email us at UAS@harris.com

About Harris Corporation

Harris Corporation is a leading technology innovator that creates mission-critical solutions that connect, inform and protect the world. The company’s advanced technology provides information and insight to customers operating in demanding environments from ocean to orbit and everywhere in between. Harris has approximately $8 billion in annualized revenue and supports customers in 125 countries through four customer-focused business segments: Communication Systems, Space and Intelligence Systems, Electronic Systems, and Critical Networks.

RangeVue™

Symphony® RangeVue™ is the first airspace situational awareness visualization tool designed specifically for UAS operations. Part of the Symphony suite of applications, Symphony RangeVue puts real-time NextGen surveillance data, obstacle data, flexible background maps and weather information in the hands of the people directly in the field or at test range operation centers for tracking UAS missions.

NextGen Data

Nationwide ADS-B ground station deployment serves as the cornerstone of the FAA’s NextGen satellite-based surveillance initiative to fundamentally improve the quality, accuracy and reliability of flight tracking data throughout the entire NAS. The NextGen data of FAA sources is augmented with local surveillance sensors to provide hyperlocal surveillance coverage for safe UAS operations.

UAS Integrated Surveillance Solutions

The Harris networked surveillance solutions combine the vast Harris network of NextGen surveillance data with the ability to integrate locally deployed surveillance assets—creating a surveillance, visualization, and alerting system for the safe operation of unmanned aircraft within the NAS.

Custom Surveillance Systems Integration

Harris’ systems engineering expertise empowers the integration of myriad surveillance sensors and other capabilities to meet customer needs.