AIRBORNE DETECT AND AVOID SOLUTIONS

Proven TCAS & ADS-B Systems Transformed: Delivering Proven Detect & Avoid Solutions for Unmanned Aircraft

SAFE AND SECURE SKIES

L3Harris is a leader in providing Traffic Collision and Avoidance Systems (TCAS) and Automatic Dependent Surveillance-Broadcast (ADS-B) surveillance and transmission. As the aerospace industry continues to forge new Unmanned Aircraft Systems (UAS) standards, L3Harris is leveraging our vast global experience to pioneer airborne-based Detect and Avoid (DAA) capabilities for military and commercial markets, including our Airborne Collision Avoidance Systems (ACAS X) family currently under development.

The existing T³CAS product fulfills the RTCA DO-365 surveillance and collision avoidance requirements for a Class 2 DAA system. This system can be integrated with an independent Remain Well Clear (RWC) subsystem.

Furthermore, we are collaborating with multiple OEMs and industry agencies to develop other variants, including ACAS Xu for Military Unmanned Aircraft Systems (UAS) and ACAS Xr that will enable Urban Air Mobility (UAM) operations.

ACAS Xu For UAS

ACAS Xu capabilities are currently supported on the ACSS T³CAS® integrated surveillance system, and includes the ACAS Xu, Mode S Transponders, and the ADS-B In/Out applications. The optional Identification Friend or Foe (IFF) capability is offered through a partner company for military missions. It meets the requirements of DO-386, applicable to military unmanned Group 3, 4 and 5 platforms.

ACAS Xr For UAM

ACAS Xr capabilities are being developed for our Lynx® NGT-9000, a proven solution fielded in numerous general aviation and light to medium helicopter platforms.

Both the ACAS Xu and ACAS Xr integrate with either a commercial off-the-shelf or an L3Harris supplied airworthy non-cooperative sensors (EO/IR, Radar, LIDAR). The next generation of these systems will evolve to lower SWAP, aligned with the maturing needs of our customers.

KEY FEATURES

T³CAS

> 4-MCU light-weight box

> Transponder (DO-181E), ADS-B Out compliant (DO-260B) ADS-B In Compliant (DO-317B)

> TCAS II (DO-185B)

> Optional Class A Terrain Awareness Warning System (TAWS)
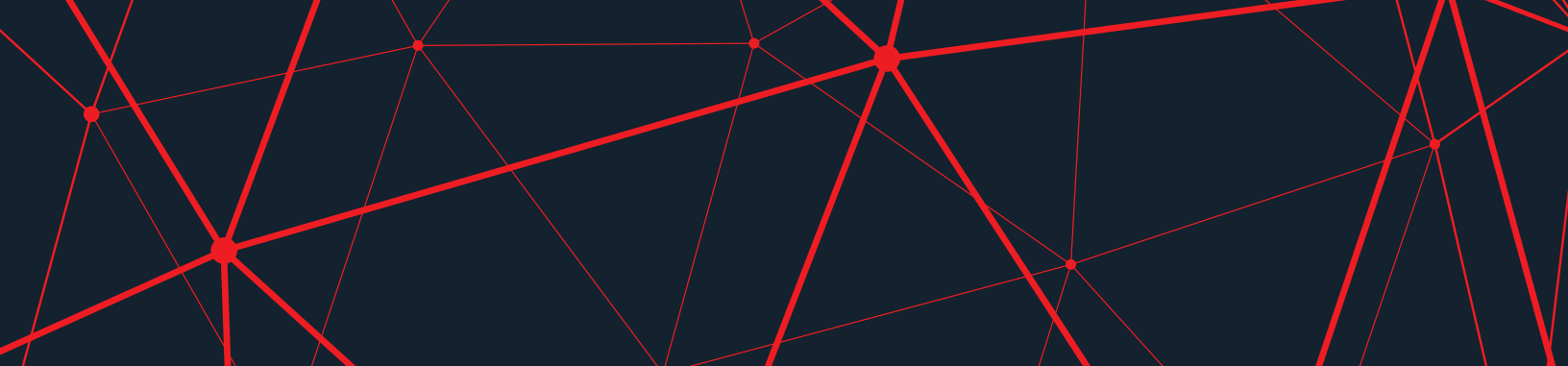
> ACAS-Xu certification 2022-23

Lynx NGT-9000

> Small form factor weighing 1.4 kg

> Dual-mode 1090ES ADS-B Out plus 1090 and 978 ADS-B In

> Rule-compliant (TSO C145c) WAAS GPS

> ARINC 429, RS-232, and RS-422 protocols

> TSO-C112d, TSO-C166b, TSO-C195b, DO-260B, DO-181E Compliant

> ACAS-Xr certification 2024-25

> Optional integration with L3Harris or COTS non-cooperative sensors

UAS/UAM SOLUTIONS

DISCOVER MORE:

www.L3Harris.com/avionics

ACAS XU APPLICABLE FOR MEDIUM AND LARGE UAS	ACAS XR APPLICABLE TO UAM AND ROTOCRAFTS
ADS-B surveillance	ADS-B surveillance
Non-cooperative Surveillance (air-to-air radar)	Non-cooperative Surveillance (air-to-air radar)
Collision avoidance alerting in horizontal and vertical domains	Collision avoidance alerting in horizontal and vertical domains
Pilot in the loop and automatic response	Pilot in the loop and automatic response
Remain well clear logic	Remain well clear logic
	Vehicle-to-vehicle link
	Speed alerts

4 MCU for
Class 4/5 UAV

APPLICABLE EXPERIENCE

ACSS has developed and flight tested several ACAS Xu prototype systems in conjunction with FAA and other industry partners to validate the ACAS Xu design concepts. More than 350 planned encounters were performed during the validation testing. Testing included:

> Cooperative and non-cooperative (radar) surveillance

> Collision Avoidance/Remain Well Clear Logic

> Automatic Response Capability

 • Traffic and Advisory Link to Ground Control Station

 • Advisory coordination

L3Harris has also worked with leading OEMs to test sensors (radars, EO/IR cameras) for obstacle detection, and

Under 2-kg Class 3
UAV & UAM

situational awareness. Over the last 5 years, multiple flight tests have been conducted for refining and enhancing radar performance.

L3Harris continues to enhance aircraft surveillance capability by actively collaborating with industry and agency forums working together for consensus among safe UAS/UAM entry into commercial and private airspace. The new L3Harris ACAS X products and sensor development are designed for UAS/UAM and aligned to industry Minimum Operational Performance Standards. These solutions provide OEMs progressive DAA technology to meet various platforms and critical aviation modernization demands for military missions as well as commercial urban mobility. To learn more, email UASdevelopmentinquiry@L3Harris.com.

ACSS®
An L3Harris & Thales Company

L3HARRIS™

19810 N 7th Ave.
Phoenix, AZ 85027
t (623) 445-7070
www.L3Harris.com/avionics