L3HARRIS™
FAST. FORWARD.

UNRIVALED AIR-TO-GROUND CONNECTIVITY

RF-7850A Airborne Family of Radios

EXCELLENCE RUNS IN THE FAMILY

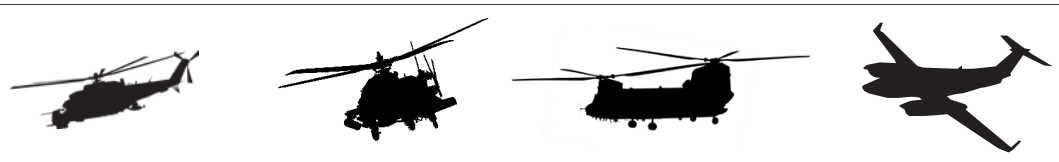
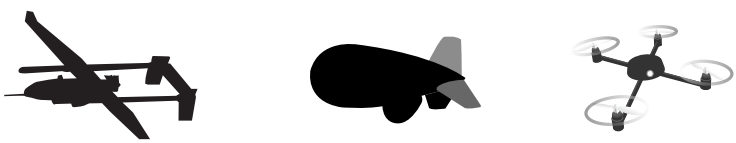
Connecting the Tactical Edge to the Aerial Tier

L3Harris manned and unmanned airborne radios take battlefield communications to new heights. These SWaP-optimized solutions leverage the field-proven, hardware platform of the RF-7850M family of handheld, base station and vehicular systems to extend battlespace connectivity to the air.

The RF-7850A-MR and RF-7850A-UA provide a seamless exchange of real-time voice and high-speed data, uniting ground and air forces in a multi-domain Common Operational Picture. They are engineered for deployment in a broad range of fixed-wing, rotary and unmanned platforms and have a software-defined architecture for fast, in-field updates to meet emerging requirements.

The multi-mission RF-7850A-MR and RF-7850-UA have compatible Falcon III® family Citadel® cryptology and high-performance waveforms, ensuring unmatched, secure interoperability up and down echelon.

FIELD-PROVEN AIRBORNE INTEGRATIONS

RF-7850A-MR	
RF-7850A-UA	

BATTLE-PROVEN TECHNOLOGIES

In Flight Around the World

The Falcon III® RF-7850A-MR and RF-7850A-UA allow forces to communicate more Situational Awareness (SA), with greater speed, at longer distances in contested, degraded and operationally limited environments—key capabilities to achieving battlespace superiority.

FALCON III RF-7850A-MR

Multi-channel Airborne Networking Radio

The L3Harris RF-7850A-MR is the world's first airborne-certified two-channel networking radio. This airborne solution gives warfighters rich, real-time C2 through simultaneous voice and high-speed IP networked data.

KEY BENEFITS:

- Ideal for fixed and rotary-wing aircraft
- Extends communication range Beyond-Line-Of-Sight for secure air-to-air and air-to-ground network interoperability
- Increases mission versatility and performance with two channels in same SWaP as single-channel solutions
- Delivers full compatibility with legacy narrowband and in-field Falcon II® and Falcon III radios
- Supports high-speed narrowband and wideband data

FALCON III RF-7850A-UA

Unmanned Aircraft Networking Radio

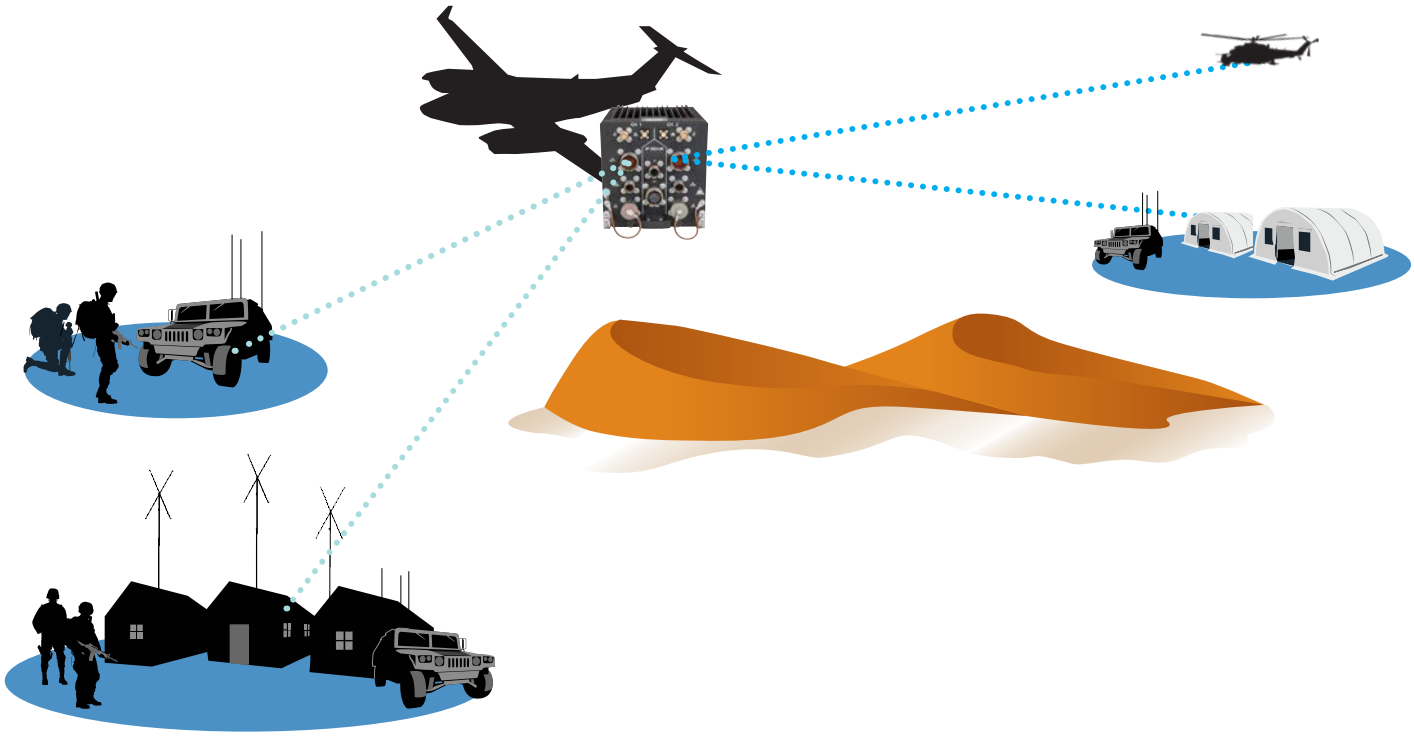
The L3Harris RF-7850A-UA delivers advanced Intelligence, Surveillance and Reconnaissance (ISR) capabilities with unprecedented high-speed data and tactical communications for better-informed decision making. Acting as a communications relay, it supports expanded communications coverage for geographically isolated units lacking traditional Line-Of-Sight connectivity.

KEY BENEFITS

- Low-SWaP profile supports easy integration into a wide variety of UAV platforms
- Improves and extends battlefield communications range when deployed as an aerial advantage node
- Remote radio operation at ground control stations via enhanced Web User Interface
- Delivers full compatibility with legacy narrowband and in-field Falcon II and Falcon III radios

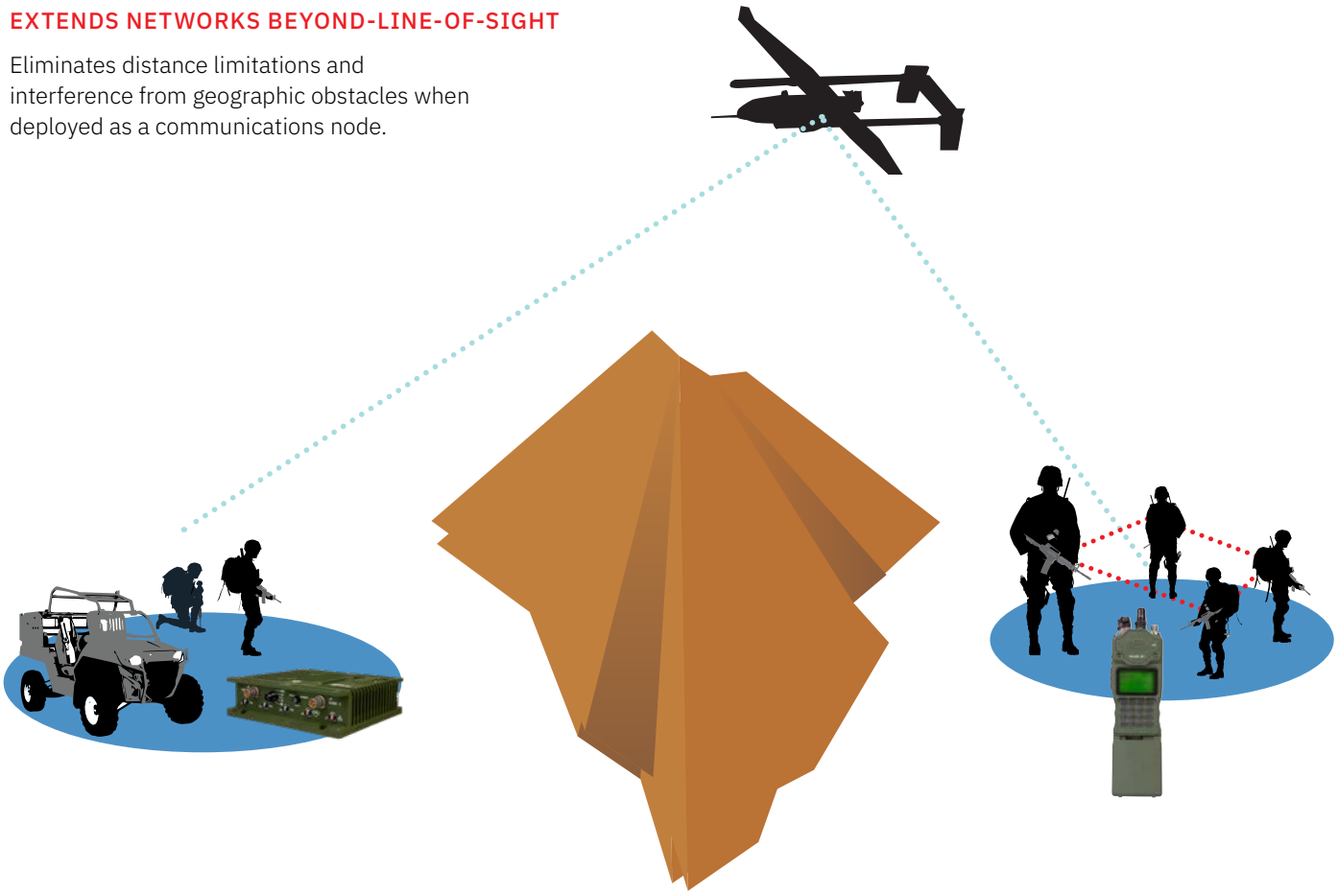
AIR-TO-GROUND CROSSBANDED COMMUNICATIONS

Unites disparate networks through dual-channel, simultaneous voice and data crossbanding to provide all echelons with real-time Situational Awareness.



EXTENDS NETWORKS BEYOND-LINE-OF-SIGHT

Eliminates distance limitations and interference from geographic obstacles when deployed as a communications node.



COMMUNICATIONS RELAY PAYLOAD SYSTEMS

Compact, Customized Airborne Range Extension

L3Harris Communications Relay Payload (CRP) Systems provide powerful communication relays, expanding critical voice, data and video connectivity for tactical edge forces in urban and geographically challenging scenarios.

Expertly designed for integration within a variety of UAVs, L3Harris CRPs, equipped with RF-7850A-UA radios, improve SA through UHF, VHF, digital and analog retransmissions. These in-flight solutions support a broad range of waveforms and frequencies, powering new, multi-mission, multi-domain capabilities.

KEY BENEFITS

Range Extension

> Overcomes geographic and urban obstacles to increase network coverage areas, allowing greater distances between users and connectivity with remote assets

Communications Gateway

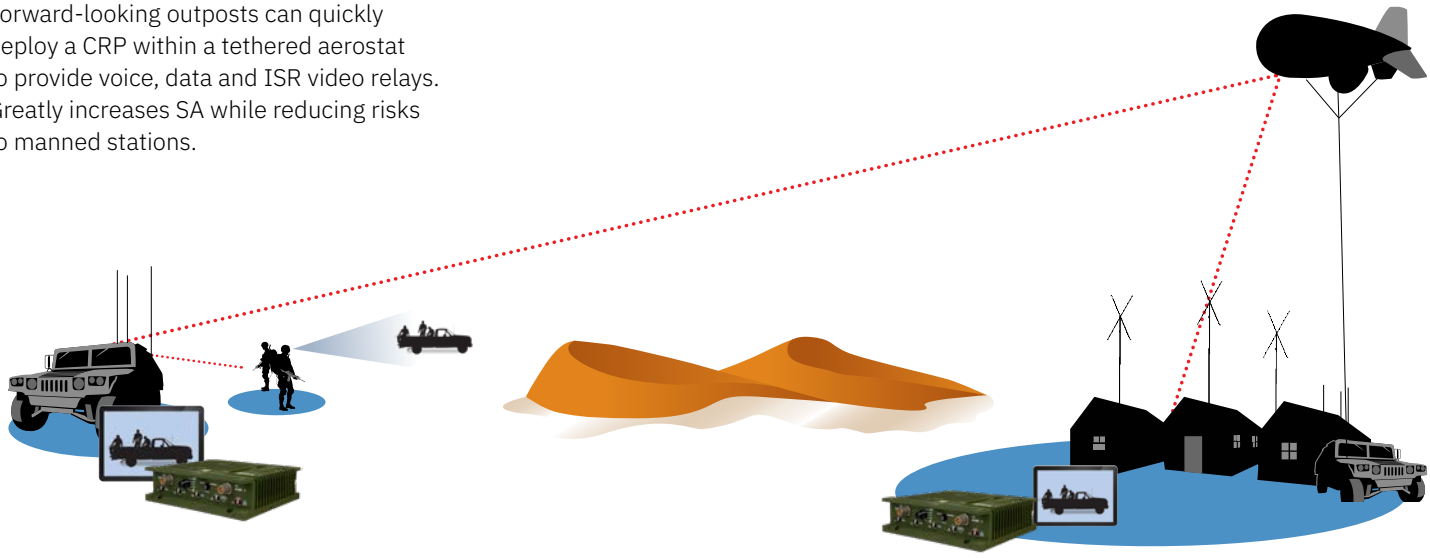
> Employs multiple waveforms and frequencies to join separate radio networks using different modulation, encryption or protocols

UAV Deployment

> Seamlessly integrates within the UAV fuselage, delivering high-value capabilities while reducing SWaP and preserving platform payload constraints

RAPID, UNMANNED RANGE EXTENSION

Forward-looking outposts can quickly deploy a CRP within a tethered aerostat to provide voice, data and ISR video relays. Greatly increases SA while reducing risks to manned stations.



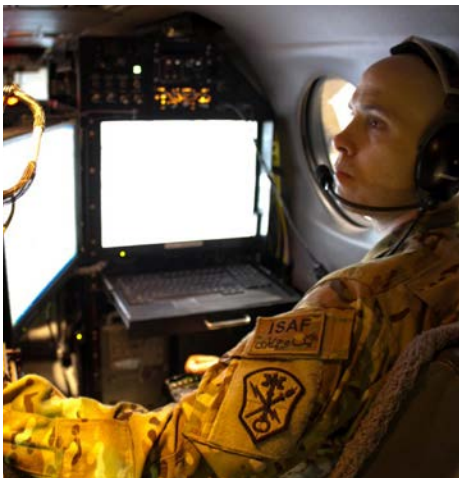
END-TO-END AIRBORNE INTEGRATIONS

Deliver Industry-Leading C4ISR

The RF-7850A-MR is a multi-purpose, multi-mission airborne radio, engineered for ease of integration into a wide variety of platforms. L3Harris has partnered with ForceX to offer a wide range of radio interface, control and display options to meet the dynamic needs of combat aircrew and leverage the power of tactical waveform technology.

ForceX integrates the RF-7850A-MR into Weaver, a SA and mission management application designed to give operators more effective tools for crew coordination and mission execution. This scalable, fully-featured app provides a multi-source Common Operational Picture along with voice and data to support real-time intel sharing with ground force commanders.

Weaver also powers up-to-the-moment Position Location Information, Tactical Chat™ IP, Full Motion Video and other advanced features leveraging the full power of the Falcon III network as illustrated below.



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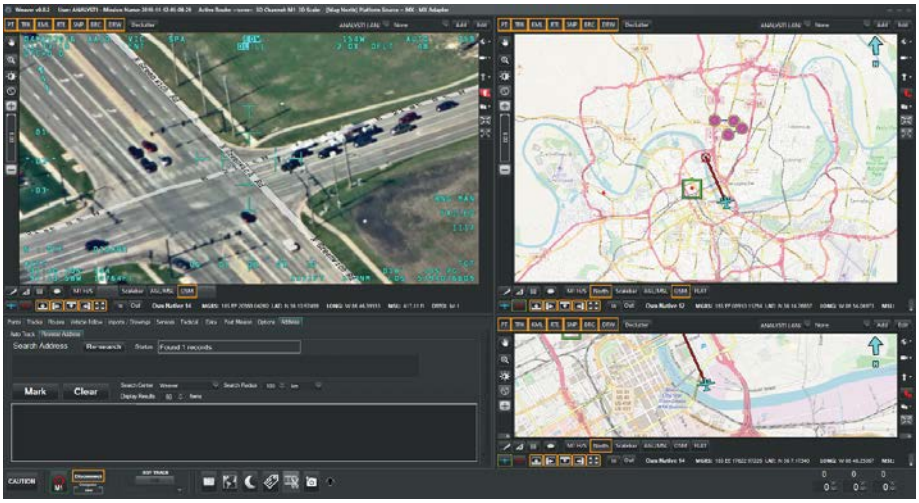
FORCEX WEAVER SOFTWARE SUITE

Powerful, Affordable ISR Mission Management

KEY FEATURES

- Radio Remote Control – Full operator access to radio features and settings
- Friendly Force Awareness – Active SA on friendly ground tracks
- Waypoint Overlays – Geo-rectified sensor video with embedded waypoint overlays
- TacChat Messaging – Ensures mission-critical messages get through in high noise environments



- Tactical Video – Displays soldier video for improved battlefield awareness

HYDRA COMMON CONTROL HEAD

Enhanced In-Flight Remote Control

The reconfigurable Hydra Common Control Head allows for simultaneous control and status display of up to 15 radios. Integration of the RF-7850A allows for seamless aircrew control and configuration during all phases of flight.

- Intuitive user interface engineered with industry best practices and end-user feedback for easy, instinctive menu layer navigation
- Compact, 7X Dzus panel height is ideal for space-constrained environments with no loss in capabilities
- Software-defined technologies adapt device functionality for different configurations, radios, sensors and radars

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FLEXIBLE RADIO CONTROLS

Meet Multiple Mission Needs

IN-COCKPIT RADIO CONTROL UNIT

This lightweight, compact solution allows pilots and co-pilots to control up to eight radio channels at once. The unit features a full-color, NVIS-compatible graphical LCD screen and soft key navigation.

KEY BENEFITS

- Certified for cockpit integration and ideal for aircraft retrofit or designing from the ground up
- User-friendly, with simplified menus and preset loading
- Multi-channel control with single Ethernet connection

WEB-BASED USER INTERFACE

Crew members can access a web-based interface to manage and control radios from an existing onboard computing device. Applications are easily customized to optimize interface navigation. The Web-Based User Interface is shipped standard with every RF-7850A-MR radio.

KEY BENEFITS

- Seamless integration with existing End User Devices
- Easily customized for a variety of edge devices and unique user requirements
- Intuitive user interface with multiple mission-critical applications operator needs

KEYPAD DISPLAY UNIT

The RF-7850A KDU simplifies and speeds network changes through easy-to-navigate menus and quick button soft key features. This remote control KDU option is ideal for radio manipulation from either in-cockpit or the aircraft's passenger area allowing operators to quickly adapt to unique mission scenarios A single maintenance KDU (six-foot connector with USB) is shipped standard with every RF-7850A-MR unit.

KEY BENEFITS

- Ideal for aircrew involved in mission coordination or pre-flight mission fill
- Familiar user interface for L3Harris Falcon III ground tactical radios and tactical radio users
- Extension option supports control from the cargo or passenger area of platform

AIRBORNE ANTENNAS

RF-7850A-AT001

FULL-SPECTRUM COVERAGE

The RF-7850A-AT001 is a vertically polarized, omnidirectional broadband antenna operating within the 30-512 MHz frequency range. Designed for use with L3Harris RF-7850A Falcon III Airborne Networking radios, the AT001 is ruggedized for reliability during helicopter and subsonic aircraft use. This antenna handles up to 50 watts of power, does not require external tuning and is DC grounded to drain static charges.

RF-7850A-AT001	
Frequency Range	30-512 MHz
Impedance	50 ohms
VSWR	3.5 : 1 maximum
Polarization	Vertical
Radiation Pattern	Omnidirectional
RF Power Capacity	50 W
Gain	-20 dBi, 30-88 MHz -16 dBi, 88-150 MHz -14 dBi, 150-225 MHz -6 dBi, 225-300 MHz -3 dBi, 300-512 MHz

RF-7850A-AT002

WIDEBAND UHF

The L3Harris RF-7850A-AT002 is a vertically polarized, omnidirectional UHF antenna operating within the 225-512 MHz frequency range. Designed for use with L3Harris RF-7850A Falcon III Airborne Networking radios, the AT002 is ruggedized for reliability during use on helicopters and subsonic aircraft. This antenna handles up to 150 watts of power, does not require external tuning and is DC grounded to drain static charges.

RF-7850A-AT002	
Frequency Range	225-512 MHz
Impedance	50 ohms
VSWR	3.0 : 1 maximum
Polarization	Vertical
Radiation Pattern	Omnidirectional
RF Power Capacity	150 W
Gain	+1 dBi

RF-7850A-AT101

TUNABLE ANTENNA

The L3Harris RF-7850A-AT101 is a vertically polarized, low-profile VHF/UHF antenna operating within the 30-512 MHz frequency range. Designed for use with L3Harris RF-7850A Falcon III Airborne Networking radios, the AT101 is ruggedized for reliable performance on lighter platforms with lower ground clearance. This omnidirectional antenna handles up to 25 watts VHF and 50 watts UHF power. Tuning is controlled by a separate Logic Control Unit.

RF-7850A-AT101	
Frequency Range	30-88 MHz 108-174 MHz 225-512 MHz
Impedance	50 ohms
VSWR	<2.5: 1 maximum
Polarization	Vertical
Tuning Time	< 60u seconds
RF Power Capacity	25 W VHF 50 W UHF
Gain	> -15 dBi, 30 MHz > -7 dBi, 88 MHz > -3 dBi, 118-174 MHz > +1 dBi, 225-512 MHz

RF-7850A-MR TUNABLE ANTENNA ADAPTER

12178-5700-01

This adapter supports the RF-7850A-MR's ability to interface with two tunable antennas. Other antenna options are available under the RF-7850A-AT10x part number scheme.

TEST IT IN THE FIELD

Trust it on the Mission

L3Harris understands the extreme demands of airborne operations and makes significant investments to ensure the Falcon III RF-7850A-MR and RF-7850A-UA are RTCA and MIL-STD certified for top performance under difficult conditions.

SETTING A NEW STANDARD IN MISSION READINESS

In today's dynamic digital battlespace, tactical radios must be operational and ready for deployment at any time. L3Harris answers the challenge with the RF-7801 Test System, the industry's only in-field solution allowing users to conduct both narrowband and wideband radio testing to keep radios at peak performance.

The test system lowers costs and supports fast turnarounds by significantly reducing components required for standard and customized testing. Customers get direct control of radio maintenance, with a cost-effective system with the functionality of multiple traditional instruments in a dramatically reduced footprint.

- Single platform for narrowband and wideband radios
- Automated testing delivers repeatable results, reduced test times and readily available data analysis
- Incorporates the latest factory test techniques and meets future tactical radio evolution requirements

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Unrivaled Air-to-Ground Connectivity: RF-7850A Airborne Family of Radios

Non-Export Controlled Information

L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.

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