RESPONSIVE SMALL SATELLITE SOLUTIONS

With a rich heritage in advanced space payloads, sensors and other technologies, L3Harris is now working with customers to plan, develop and execute affordable high-performance space missions using small satellite constellations.

ADVANCING SMALL SATELLITE CAPABILITIES WITH END-TO-END SOLUTIONS

Building on more than 50 years of space and intelligence mission success, L3Harris has adapted technologies used for our sensors and payloads, satellite ground systems and advanced data analytics to high-performing smallsat platforms.

Today we deliver the full spectrum of smallsat services—starting with mission planning and engineering design; continuing through manufacturing, integration and testing; and extending into mission execution with launch services, satellite operations and intelligence deliverables. Throughout, we work in partnership with customers to introduce innovations that reduce costs, shorten schedules and manage risk.

In addition to providing these services for specific customer missions, we designed, built, launched and operated our own smallsat, HSAT, in 2018 for demonstration and testing purposes. L3Harris has launched three smallsats into low Earth orbit in recent years. We are scheduled to launch another five in 2020 and several more moving forward.

PUTTING THE MISSION PAYLOAD FIRST

Mission success depends on having the right sensor payload. L3Harris maximizes the performance of smallsats by starting with high-compaction, high-performance payloads that best meet mission needs and then integrating commercially available bus components around the payload to fit within form factors that enable affordable launch options.

DELIVERING KEY MISSIONS AND GREATER RESILIENCY WITH RESPONSIVE SMALL SATELLITE SOLUTIONS

> Smallsat constellations are an affordable way to gain persistent satellite coverage and increased mission resiliency
> Using sensor-optimized smallsat designs, L3Harris solutions put the requirements of the mission first
> L3Harris’ proven technologies and demonstrated smallsat performance enable us to meet our customers’ most important needs
> L3Harris processing and analysis tools and services transform smallsat data into high-value products
Responsive small satellite solutions

L3Harris specializes in several key mission technologies that enable us to deliver our comprehensive, high-value smallsat solutions.

**HIGH-PERFORMANCE SPACE ANTENNA REFLECTORS**

L3Harris designs and manufactures deployable mesh reflectors that can be compactly stowed for launch and unfurled in space to deliver unparalleled performance in bands ranging from UHF to V band. To date, approximately 100 mesh antenna reflectors and counting have been built for our commercial and government customers, enhancing broadcast; communications; and intelligence, surveillance and reconnaissance missions. Together, they have recorded more than 800 years of reliable on-orbit service. Combined with our high-performing feed solutions, these highly compact reflectors enable smallsats to meet exacting mission demands.

**SPACEVIEW™ IMAGING SYSTEMS**

L3Harris’ SpaceView™ imaging system products include smaller, lighter-weight offerings. Based on a legacy of spaceborne imaging systems that deliver the highest resolution commercially available, these smaller systems are capable of capturing images with 1-meter resolution. SpaceView™ systems for smallsats start at a 0.24-meter aperture to meet imaging and size, weight and power requirements for smallsats, with payloads that can capitalize on standard ESPA-APL envelope configurations.

With diverse sensor capabilities and a broad spectral range—from visible through infrared and up to 8-band multi-spectral—L3Harris SpaceView™ systems can be tailored to different missions. The ability for most models to support two on board cameras can double system coverage on a single satellite or better serve customers who have multiple missions with two different camera modalities in the same payload.

**RECONFIGURABLE RADIO FREQUENCY PAYLOADS**

Mission adaptability and scalability are critical for responsive space solutions. L3Harris’ reconfigurable, multimission, software-defined architecture platform for hosted payloads and smallsats enables operators to quickly add new capabilities and adjust to changing missions—even once the satellite is on orbit. Today, more than 160 L3Harris reconfigurable multimission payloads are serving government and commercial missions, and we have adapted the technology to provide a game-changing, software-defined architecture for smallsats. For example, we’ve demonstrated the performance and reprogrammability of these payloads on the 6U HSAT smallsat. We’ve also displayed our responsive space solutions leadership as part of a demonstration series of end-to-end smallsats for a U.S. Air Force constellation that L3Harris is designing, developing, building, testing and deploying.

**SCALABLE GROUND SYSTEMS**

For as long as L3Harris has designed and manufactured spaceborne sensors, payloads and structures, we have also developed state-of-the-art ground systems. Today we are drawing upon that experience to lead the way in delivering the infrastructure needed to control, operate and manage constellations of smallsats. We reduce cost, risk and schedule by using commercially available products to provide a scalable ground architecture that tasks, commands, controls and transports petabytes of data.

**ACTIONABLE INTELLIGENCE**

To bridge the gap between smallsat data collection and decision making, L3Harris provides the processing and analysis tools and services that transform big data into high-value products. Our advanced processing, analytics and data science quickly convert raw sensor data into fit-for-use results ready for analysis. Our image and data analysis solutions include both custom development and integration services and commercially available software that enable analysts to deliver the expert-level results to the most challenging geospatial questions.