

INNOVATIVE GROUND SYSTEMS FOR WEATHER MISSIONS

Bringing Life-saving Data Down to Earth

As extreme weather threatens lives and livelihoods around the world, L3Harris is committed to delivering next-generation global weather capabilities to forge a new era of preparedness.

THE IMPORTANCE OF GROUND SYSTEMS FOR WEATHER MONITORING AND EARLY RESPONSE

Catastrophic weather events are becoming more frequent, destructive and widespread than ever before. Without ground systems collecting raw data from space and helping to convert it into critical information for forecasters, it would be very difficult to monitor and predict changes in weather, climate and environmental conditions.

This complex network of technologies brings satellite data down to Earth, processes it and then reliably distributes the resulting data products to users worldwide, such as forecasters, research scientists and the public, in near real-time, 24/7.

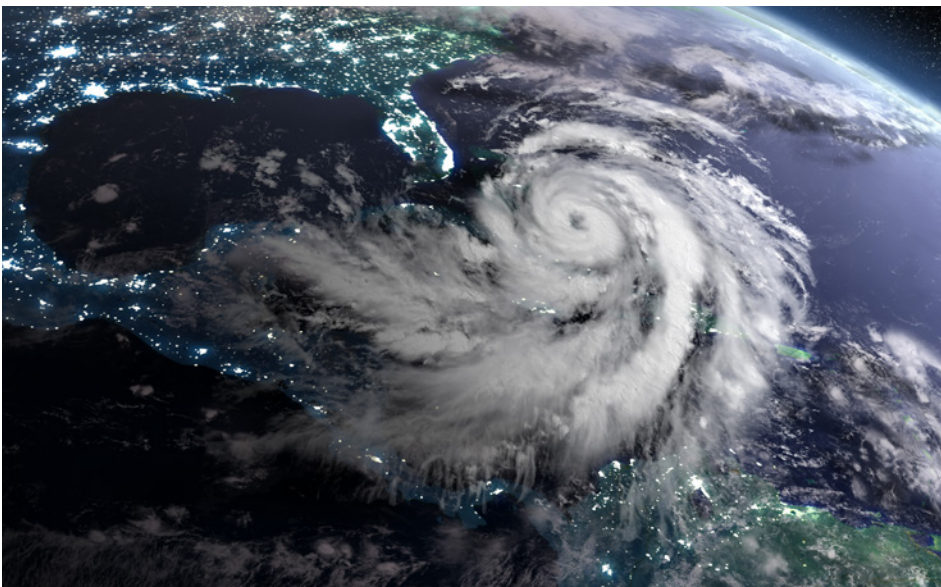
L3HARRIS' INNOVATIVE GROUND SYSTEM TECHNOLOGIES

For more than five decades, L3Harris has designed, built and delivered mission-critical weather sensors and ground systems for the National Oceanic and Atmospheric Administration (NOAA). As the world's satellite systems become more advanced and capture larger volumes of data at higher speeds, ground systems need to keep pace. That is why L3Harris is implementing high-performance computing, machine learning, artificial intelligence and advanced antenna technologies – to ensure the U.S. has a scalable, secure and reliable ground system that delivers life-saving weather information faster than ever before.



BENEFITS

- > Helps keep people safe and out of harm's way by improving forecast accuracy and increasing life-saving warning times globally
- > Supports NOAA's strategic goals to build both a "weather ready" and "climate ready" nation
- > Enables the monitoring and forecasting of solar activity and space weather to reduce economic and national security impacts
- > Helps detect and mitigate the negative impacts of radio frequency (RF) interference on NOAA's weather satellite operations



L3Harris is bringing life-saving weather data down to earth by providing innovative, real-time, high-throughput ground solutions for the following programs:

STATE-OF-THE-ART GOES-R GROUND AND ANTENNA SYSTEMS

The GOES-R ground system – designed, developed, tested and implemented by L3Harris – is the Western Hemisphere’s most advanced weather-monitoring satellite system. It receives raw data from GOES-R Series spacecraft and generates real-time data products used by the U.S. National Weather Service and thousands of direct users worldwide for severe weather warnings, real-time fire detection and other critical applications.

GEOSTATIONARY GROUND SUSTAINMENT SERVICES (GGSS)

L3Harris designed, developed and deployed the core functional elements of the high-throughput, rapid-processing GOES-R ground and antenna systems and was recently selected to extend the functionality of these crucial systems for future mission needs.

SPACE WEATHER FOLLOW ON (SWFO)

L3Harris is currently integrating the command-and-control capability for NOAA’s Space Weather Follow On mission into the highly scalable, multimission GOES-R ground architecture to help monitor and forecast space weather events with the potential to adversely impact national security and economic prosperity.

DIGITAL PHASED ARRAY ANTENNA SYSTEM (DPAAS)

L3Harris is partnering with NOAA to deliver better, faster satellite data as part of a cooperative research and development agreement to develop and evaluate a multiband, multimission digital beamforming phased array antenna system – designed to establish contact with various satellites regardless of their orbital planes, technical configurations and data rates. The goal of the research partnership is to help NOAA handle an increase of satellite data expected during the next decade.

RADIO FREQUENCY INTERFERENCE MONITORING SYSTEM (RFIMS)

L3Harris is currently helping NOAA develop, produce, install and maintain a radio frequency interference monitor system to mitigate the risk of potential interference by commercial wireless carriers sharing the spectrum with NOAA satellite operations. Other affected government departments, such as the Departments of Defense (DoD), may also benefit from the development of this radio frequency interference monitoring system.



Key Applications

Our ground solutions are a leading source of critical data for:

- > Weather forecasting and warnings
- > Detection and monitoring of environmental hazards (e.g., wildfires, smoke, fog, volcanic ash and dust)
- > Solar activity and space weather monitoring and forecasting
- > RF interference monitoring and mitigation