ADVANCED ASSET MANAGEMENT SOLUTIONS FOR UTILITIES

HARRIS® TECHNOLOGY TO CONNECT, INFORM AND PROTECT™

HarrisGeospatial.com

GAIN NEW PERSPECTIVES ON YOUR NETWORK INFRASTRUCTURE

As utilities seek to improve on all aspects of network asset management, automating operations using remote sensing technology such as LiDAR, UAS, and geospatial analytics is becoming a safe, accurate, and low-cost approach. Whether its managing vegetation, monitoring assets, or responding to a weather event, remotely sensed data can provide critical insights faster and more affordably then traditional visual inspections. For over 30 years, Harris Geospatial Solutions has been exclusively focused on leveraging remotely sensed data to solve some of the most challenging problems in the industry. Today, Harris is firmly established as an industry leader in image science, and with the ever-increasing availability of geospatial data, utilities rely on Harris for solutions that deliver critical network information. With efficiency, reliability, and scale in mind, Harris has developed an end-to-end solution and utility specific modules that collect, manage, and leverage remotely sensed data to help utilities solve many of their most pressing business problems.

Asset Management

Harris offers solutions to collect and manage all types of remotely sensed data and generate valuable asset management insights. For example, Harris offers its Geiger-mode LiDAR services that can map an entire network at the highest point densities to extract intricate details of network assets, providing a complete and accurate record of the as-built T&D infrastructure to downstream systems such as GIS, work management, and asset inventory.
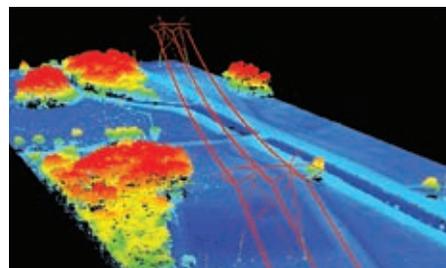
Leveraging UAS-based video and imagery, Harris' deep learning technology can detect anomalies on assets such as missing or damaged components, pole split/rot, bird's nests or other animal infestation, lightning strikes, corrosion, or rust. Using infrared data, analyses of temperature profiles on equipment can be automatically generated to provide insights on power flow and predict potential equipment failures.

Using LiDAR data, clearance information on overhead T&D infrastructure can be calculated with Harris technology to support minimum clearance zones between communications and electric spans as part of a joint use management plan, as well as identify potential NERC clearance violations with nearby structures. These insights can be delivered to GIS to get a clear picture of surrounding infrastructure such as under wire crossings, roads, water features, slope, and other clearance issues.
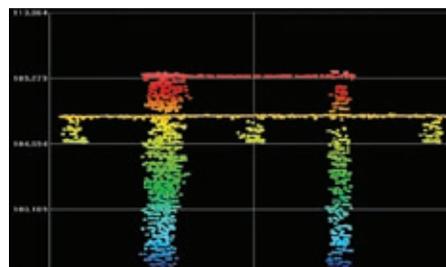

As data is collected along a network over time, Harris' change detection technology can be utilized, providing proactive insights such as increasing pole tilt, changes in joint use attachment, or increasing amounts of rust on equipment. Paired with other data sources such as maintenance history, these analytics can provide a powerful predictive capability to improve reliability.

Vegetation Management

Vegetation management represents the largest preventive maintenance expense for utilities while also being the most significant contributor to system reliability. While traditional vegetation management practices are time consuming, costly, and not always accurate, there is increasing pressure to come up with new mitigation approaches to deal with increased threats of wildfires and system outages. Harris offers data collection, data management, and advanced analytics to automatically identify areas of potential encroachment on the ground, along conductors, or at the pole top. Output from this analysis provides prioritized areas for field crews to remediate.
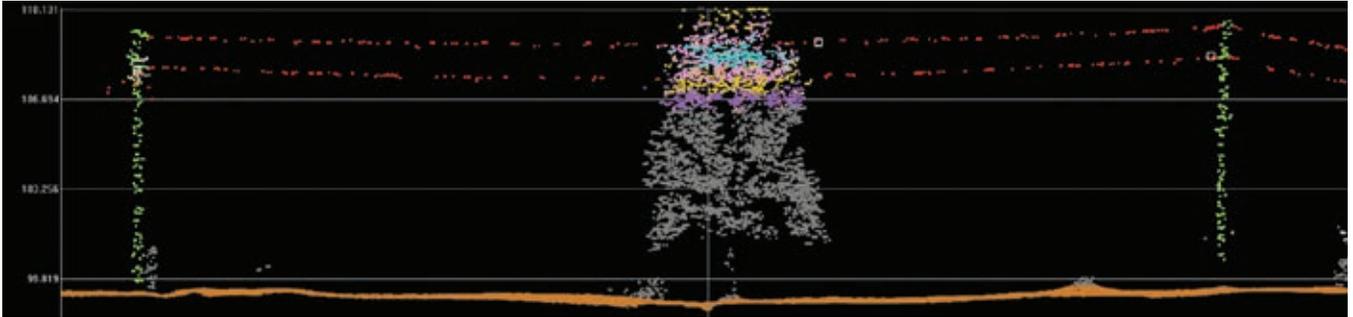

Emergency Response and Storm Restoration

In today's economy there is zero tolerance for an electrical outage, regardless of the severity of a natural disaster. Having a comprehensive record of T&D infrastructure is imperative in order to quickly assess damage with a clear path to the restoration target. Harris provides data and solutions to assess damage and quickly formulate a restoration plan. Harris' Geiger-mode LiDAR data provides baseline maps of the entire network. And through a range of post-storm data collection techniques – from space, in the air, and on the ground, Harris' change detection analytics can detect anomalies between the baseline map and current information. This automated approach allows organizations to position repair crews and restore power more rapidly and effectively.


Site Assessment and Planning

Remote sensing technology is invaluable in the site assessment and planning process, and Harris provides a range of solutions to control costs and reduce risk to the business. Early in the corridor planning process it's important to accurately evaluate the terrain, taking into consideration impacts to the environment, private land owners, and regulations. From a maintenance perspective, the ability to analyze sites and respond to changes in environmental and geographic characteristics creates efficiencies in field operations. These capabilities are made easy through the incorporation of remote sensing data with Harris technology to derive elevation models, overlay landcover maps, select proper network routes, and calculate access paths.
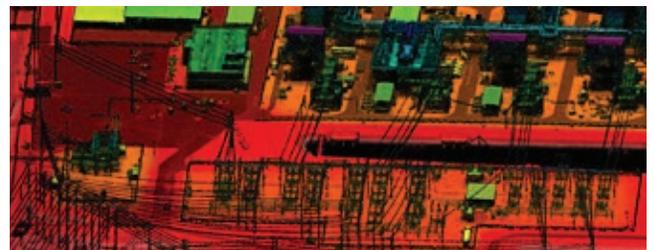
THE FUTURE OF ASSET OPERATIONS

As the utility industry expands their use of remote sensing technologies to improve operational efficiency, Harris Geospatial Solutions continues to advance their technology to support asset management, vegetation management, emergency response, and site assessment and planning workflows. Harris leverages its LiDAR data collection, core data management, machine learning, and geospatial analytics technologies developed over a period of more than three decades to deliver critical business answers to utilities of all sizes. This utility-centric focus enables Harris to integrate big data and image science to revolutionize the way electric T&D utilities inspect and maintain their assets, with a goal to help improve safety, increase cost effectiveness, and improve reliability.

ANALYTICS.
INSIGHTS.
ANSWERS YOU
CAN TRUST.
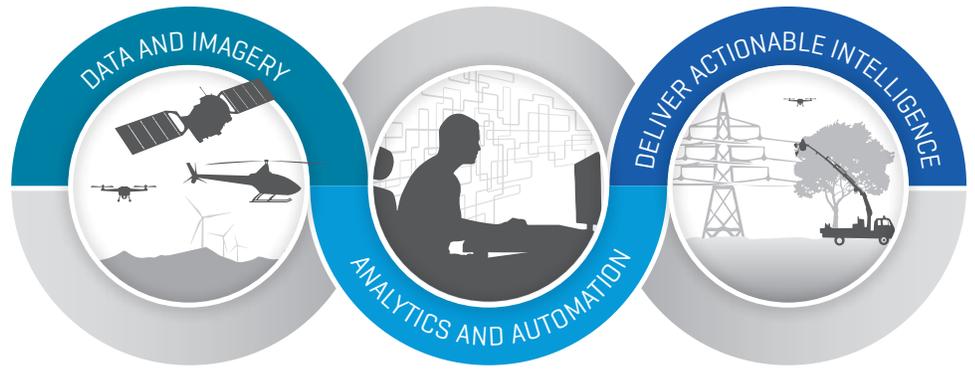
Data Collection

To enable system-wide network management, it is necessary to start with precise information and a complete view of the T&D infrastructure. Harris offers high-altitude, high-precision Geiger-mode LiDAR data which provides wide area coverage in greater detail to extract pole and wire assets down to the distribution level. Since data are collected over wide areas instead of being restricted to linear corridors, other critical information can be obtained in contrast to typical ROW-only collection approaches. This unique technology creates point clouds that support derivative products and subsequent analytics for a variety of utility applications across all parts of the organization.

Data Management

As utility companies capture and consume more remotely sensed data, establishing a centralized data management system is core to the foundation of their business. Users throughout the organization need quick access to the right data to make informed decisions, whether it is to monitor the state of infrastructure, mitigate vegetation risks, or respond to natural disasters.

Leveraging years of success in the defense and intelligence domain, Harris has now commercialized its advanced data management system, providing a platform that ingests all types of imagery, video, LiDAR and other forms of remotely sensed data. The solutions offered by Harris let users in the field or in an operations/data center quickly locate critical intelligence with advanced discovery and filtering capabilities, so they can make informed decisions with a high degree of confidence.

Data Analysis & Insights

Harris' industry-leading, scientifically proven remote sensing analytics are chosen by image scientists, geospatial analysts, and GIS professionals around the world to extract accurate and meaningful information from any type of remotely sensed data.

Harris' utility offerings are based on this technology and designed to deploy any number of analytics, including image classification, multi and hyperspectral analysis, and LiDAR feature extraction. These capabilities are brought together in the form of utility-specific workflows, allowing a utility of any size to take advantage of the power of Harris' remote sensing analytics without requiring a staff of image scientists.

About Harris Corporation
Harris Corporation is a leading technology innovator, solving customers' toughest mission-critical challenges by providing solutions that connect, inform and protect. Harris supports government and commercial customers around the world. **Learn more at harris.com.**

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