L3HARRIS | AMPlify Utility Asset Management Solution
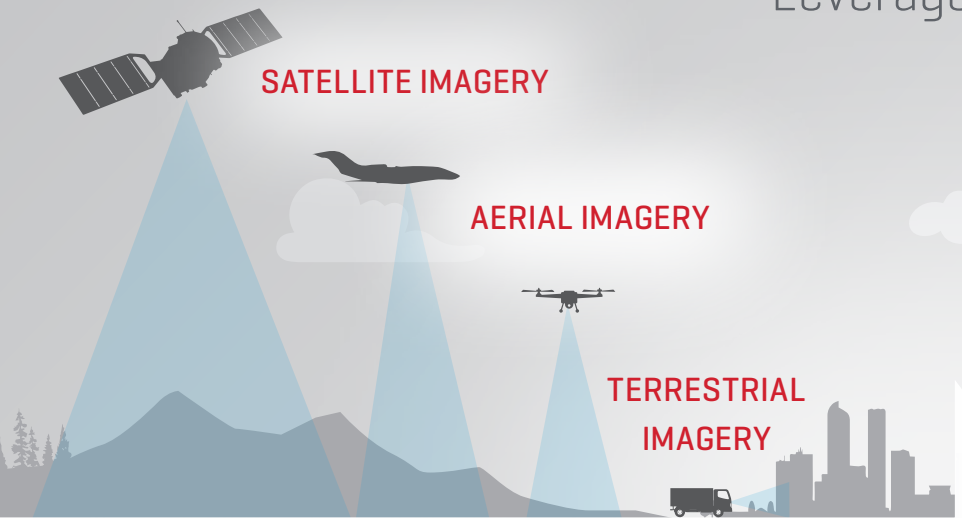
Leverage Big Data and Image Science to Deliver Critical Business Answers.

SATELLITE IMAGERY

AERIAL IMAGERY

TERRESTRIAL IMAGERY

DATA & IMAGERY

BIG DATA

PROCESS & ANALYZE

Extract contextual, meaningful information from all types of data and imagery

Image Analytics & Deep Learning

Image & Data Management

Remote Sensing Expertise

ASSET MANAGEMENT	VEGETATION ENCROACHMENT	STORM DAMAGE ASSESSMENT

DISSEMINATE & ACT

Infrastructure Mapping	Clearance Analysis	Storm Planning
Remote Inspection	Predictive Growth Analytics	Post-storm Assessment
Change Detection	Operations Management & Safety	Asset Restoration

Revolutionize Electric Utility Transmission and Distribution Asset Inspection and Maintenance Operations

Utilities need to manage assets while simultaneously optimizing costs, improving safety, and ensuring reliability and customer satisfaction. With a large portion of budgets tied up in fixed costs, remote sensing applications are being looked to as a way to loosen the margin squeeze. Imagery from satellites, fixed-wing aircrafts, and Unmanned Aerial Vehicles (UAVs) can provide a tremendous amount of data. But having data is not enough - the data needs to be transformed to answer specific questions.

L3Harris Geospatial has introduced a utility asset management platform (AMPlify) to help automate, scale, and optimize asset management operations to meet business challenges. AMPlify can manage, process, and analyze geospatial imagery, apply deep learning, and deliver actionable intelligence at the right time, in the right place, to the right people. AMPlify is based on market leading data management and analytics technology and over 30 years of experience in the remote sensing domain.

AMPLIFY FEATURE SUMMARY

MANAGE BIG DATA
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.

AMPlify fully utilizes L3Harris' core competency in processing, storing, discovery, and exploitation of geospatial data at scale and is able to ingest imagery, video, LiDAR and other forms of remotely sensed data to analyze utility T&D infrastructure. With AMPlify, users in the field or in an operations/data center can quickly locate critical intelligence with advanced discovery and filtering capabilities so they can make informed decisions with a high degree of confidence.

PROCESS AND ANALYZE DATA
L3Harris' 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.

AMPlify Is architected to deploy any number of L3Harris analytics, including image classification, multi and hyperspectral analysis, and LiDAR feature extraction. These capabilities are brought together in AMPlify in the form of utility-specific workflows, allowing a utility of any size to take advantage of all of the power of L3Harris' remote sensing analytics without requiring a staff of image scientists.

APPLY DEEP LEARNING TECHNOLOGY
MEGA, L3Harris' advanced deep learning technology focused on extracting insights from remotely sensed data, is an integral component of AMPlify. Beyond standard libraries designed to detect common anomalies on T&D infrastructure, new classifiers can be developed with specific data collected by the utility and deployed within AMPlify to provide tailored inspection analytics. These analytics can be automated to run on data ingest in real-time, or used interactively by analysts to review and improve the deep learning models.

www.L3HarrisGeospatial.com/Utilities

USE CASES
AMPlify is designed around key utility workflows, including:

T&D ASSET INSPECTION
AMPlify leverages L3Harris' deep learning technology applied to imagery and LiDAR to detect anomalies on assets, which can range from missing or damaged components, pole lean, pole split/rot, birds nest or other animal infestation, lightning strikes, corrosion, or rust.

THERMAL "HOTSPOT" DETECTION
Using infrared data in AMPlify, the analysis of temperature profiles on equipment can provide insights on power flow and predict potential equipment failures.

VEGETATION ENCROACHMENT
With LiDAR data, AMPlify can support a vegetation management workflow by automatically identifying 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 the encroachment.

CLEARANCE ANALYSIS
Using LiDAR data, clearance information on overhead T&D infrastructure can be calculated in AMPlify to support minimum clearance zones between communications and electric spans as part of a joint use management plan, as well as identifying potential NERC clearance violations with nearby structures.

POST-STORM DAMAGE ASSESSMENT
Leveraging the big data archive available in AMPlify, change detection analytics can be executed to detect anomalies between a baseline and data collected immediately after a storm event. This automated approach to post-storm damage identification allows organization to better position repair crews and restore power faster.

This same change detection capability can be utilized for any time period, providing proactive insights on changes occurring on the network, such as increasing pole tilt with time, changes in joint use attachments, or increasing amounts of rust on equipment.

AMPlify can be implemented in a secure hosted environment or on premise, with deployment options dependent on preferred utility metrics such as circuit-miles covered, number of assets analyzed, imagery data size managed, etc.

KEY BENEFITS OF AMPLIFY

- **OPTIMIZE COSTS**
- **IMPROVE SAFETY**
- **ENSURE RELIABILITY**
- **CUSTOMER SATISFACTION**

INTEGRATION WITH UTILITY OPERATIONS
L3Harris understands the requirements around operations integration and has developed AMPlify to work seamlessly with other operational systems such as GIS, work management, and asset management.

GIS INTEGRATION
- Support for mission planning by accessing the GIS data representing the distribution infrastructure
- Automatically tag data ingested by AMPlify with GIS information such as asset IDs and other basic metadata to create associations between assets
- Providing hyperlinks to specific images of assets based on the associations create so that GIS analysts can review current and historical images of assets
- Updating GIS assets with information derived from AMPlify's analysis tools

WORK MANAGEMENT
- Integrate with ticketing system to create work orders when anomalies are detected

ASSET MANAGEMENT
- Integrate with maintenance management systems to compare analytics results with historical inspections and repair records
- Compare current asset configurations as detected by analytics with as designed specifications or as-built records.