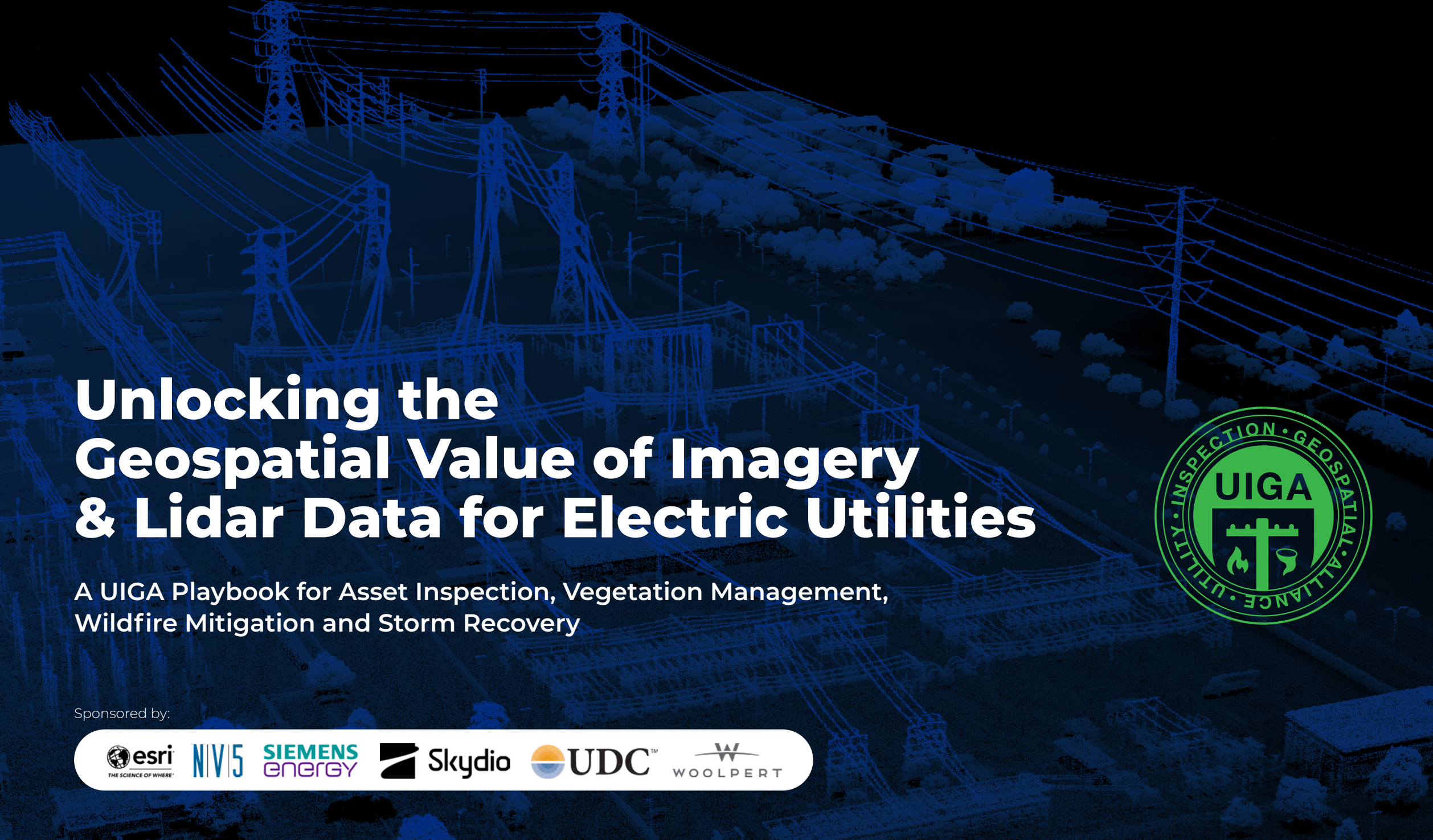

Unlocking the Geospatial Value of Imagery & Lidar Data for Electric Utilities

A UIGA Playbook for Asset Inspection, Vegetation Management, Wildfire Mitigation and Storm Recovery

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Executive Summary

“Unlocking the Geospatial Value of Imagery & Lidar Data for Electric Utilities” is UIGA’s utility playbook offering utilities foundational knowledge and best practices to modernize asset inspection, vegetation management, wildfire mitigation and storm recovery. It explores how integrating reality capture technologies with geospatial platforms, artificial intelligence and automation enables a shift from reactive maintenance to proactive, intelligence-driven operations.

Rather than simply collecting more data, **utilities must establish enterprise strategies for acquiring, governing, managing and applying trusted imagery and lidar data.** To maximize value, utilities should:

- *Build a shared geospatial foundation*
- *Eliminate data silos*
- *Modernize workflows*
- *Adopt scalable data architectures*

The playbook offers a series of modernization best practices, key questions to ask and answer to build the right modernization roadmap and no-regrets actions to start now.

These foundational playbook steps will position utilities to take advantage of emerging capabilities, such as advanced analytics, digital twins, predictive asset inspection and AI-enabled automation. Utilities with a strategic approach to capturing, managing and operationalizing imagery, lidar and geospatial data as enterprise assets will be best positioned to:

- *Reduce outages*
- *Extend asset life*
- *Increase inspection and maintenance efficiency*
- *Strengthen regulatory compliance*
- *Enhance system resilience*

By following a structured modernization roadmap and partnering with technology providers that support open, interoperable ecosystems, utilities can accelerate their transition to a safer, more reliable, and more resilient electric grid while delivering greater long-term value.

Introduction

For more than a century, electric utilities have built an astounding record delivering reliable and affordable power through a stable model of operations that remained insulated from disruptive change. However, a period of rapid technology and operational changes and challenges has arrived, creating imperatives for adaptation that include:

- *More efficient, streamlined, cost-effective methods for evaluating assets in the field*
- *More targeted and prescriptive management of vegetation issues that directly affect assets deployed in the field*
- *Stronger risk mitigation strategy for fires and other related threats to the electric grid*
- *Faster, more efficient evaluation of impacts from major events like storms*

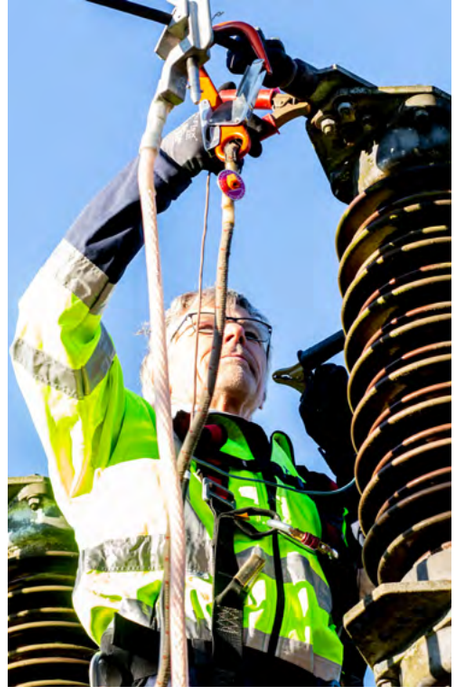
Failure to adapt will hamper utilities' mission to deliver reliable and affordable electricity. It will increase burdens on aging assets and add pressure to rising capital and operational expenditures.

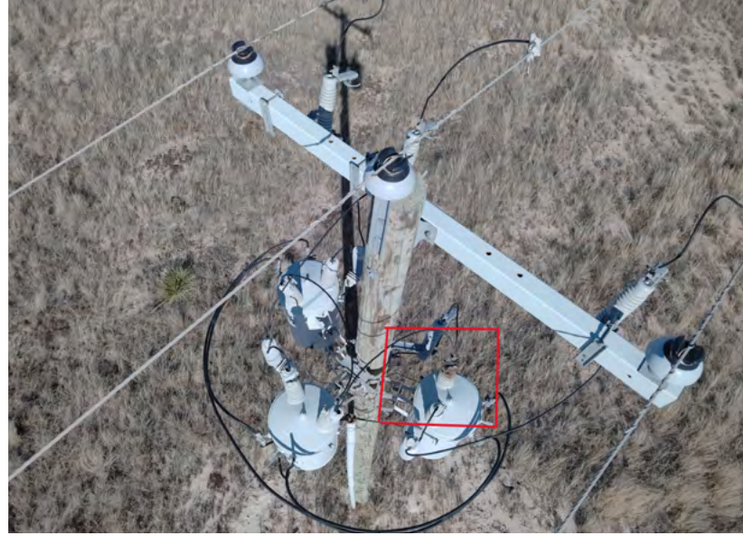
Fortunately for utilities, new technology solutions and innovative approaches have arrived in time to enable fundamental and necessary changes. Traditional and emerging forms of imagery — combined with geospatial technologies, machine learning and artificial intelligence-based automation — are unlocking the power of data to deliver asset inspection value across the enterprise.

"Unlocking the Geospatial Value of Imagery & Lidar Data for Electric Utilities," a Utility Inspection and Geospatial Alliance (UIGA) playbook, helps utilities modernize across UIGA's four pillars:

- *Asset inspection*
- *Vegetation management*
- *Wildfire mitigation*
- *Storm restoration*

The playbook provides a foundation for utility leaders to harness the value of their organization's imagery and geospatial data for successful modernization efforts through insights from UIGA and leading geospatial technology and service experts, including Esri, NV5, Siemens Energy, Skydio, UDC and Woolpert.





It's Time Tradition Gives Way to the Future of Utility Asset Inspection

For many utilities, asset inspection and maintenance practices remain rooted in operational models developed decades ago. Field crews, vehicle fleets and manual inspection processes continue to serve as the backbone of asset management programs, despite growing pressure to improve reliability, reduce costs and enhance operational resilience. While digital documentation has replaced much of the paper-based recordkeeping of the past, valuable asset information often remains fragmented across systems, limiting its accessibility and strategic value.

Advances in remote sensing, intelligent sensors, automation, artificial intelligence and geospatial technologies are transforming how infrastructure can be monitored and managed. Utilities today operate across a continuum of inspection approaches, where traditional field-based methods increasingly coexist with automated, data-driven capabilities that provide greater visibility, speed and insight.

The limitations of legacy inspection workflows are increasingly difficult to justify in an era of rising customer expectations, aging infrastructure, climate-related risks and growing regulatory scrutiny. It is not uncommon for field crews to be dispatched to inspect assets only to discover inaccurate records, outdated inventories or disconnected data sources that undermine efficiency and decision-making. These operational inefficiencies result in unnecessary costs, lost productivity and delayed maintenance activities that can directly impact system performance.

Leading utilities are shifting their focus from reactive asset management toward proactive, intelligence-driven operations.

UIGA's 4 Pillars Defined

Asset inspection:
Tracking and maintaining assets to optimize performance, reduce downtime, and ensure reliable and cost-effective service.

Vegetation management:
Monitoring and maintaining vegetation near utility assets to reduce risks, prevent outages and meet compliance standards.

Wildfire mitigation:
Managing vegetation, hardening infrastructure and using advanced planning and monitoring solutions to reduce fire risks and protect communities in wildfire-prone areas.

Storm restoration:
Repairing infrastructure and restoring power to ensure community safety and service after severe weather events.

The traditional means of executing on UIGA's four pillars have become inadequate in light of strategic imperatives to extend the life of aging assets, meet rising electricity demand and build stronger resiliency in the face of increased major storms and the growth of renewable energy sources.

By leveraging integrated asset data, geospatial intelligence and automated inspection technologies, organizations can gain a more accurate understanding of asset condition, prioritize interventions based on risk and respond to emerging issues before they become costly failures. The future of utility asset inspection is not simply about collecting more data but transforming data into actionable intelligence that drives better business and operational outcomes.

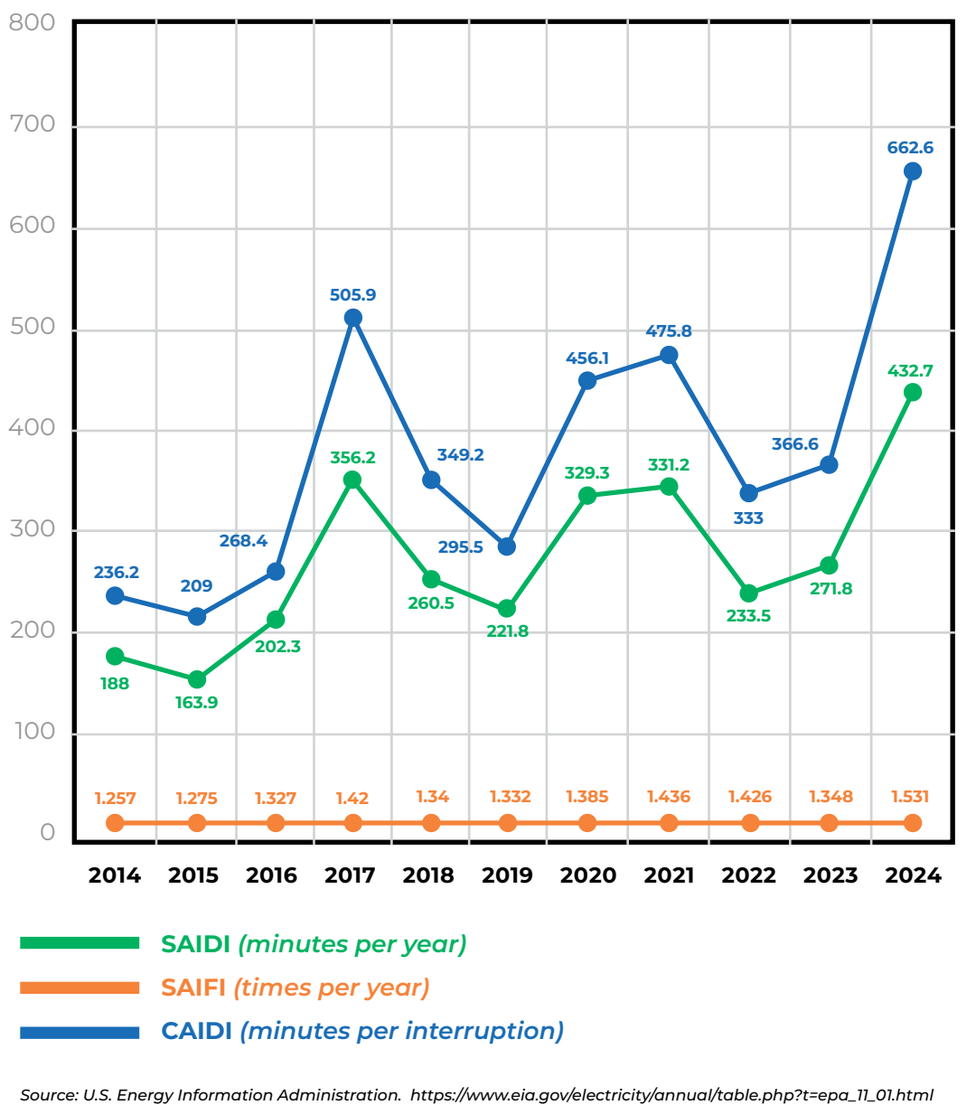
Over the past decade, grid reliability has faced increasing pressure as utilities work to maintain or improve key reliability indicators, such as SAIDI (System Average Interruption Duration Index), SAIFI (System Average Interruption Frequency Index) and CAIDI (Customer Average Interruption Duration Index). While reliability targets vary by utility, geography, regulatory framework and operating environment, the industry expectation remains clear: reduce the frequency and duration of outages while improving customer service and grid resilience.

As aging infrastructure, extreme weather events, accelerating electrification and growing demand place additional stress on the network, many utilities have found it challenging to achieve the continuous improvements required to meet stakeholder and regulatory expectations. The trends illustrated to the right highlight the growing gap between escalating operational demands and the industry's efforts to improve reliability outcomes through traditional maintenance and inspection approaches alone.

However, utilities have a resource on hand they can wield to reverse the downward trend in reliability indicated by their key reliability metrics. This includes imagery and lidar data acquisition and management, and its application to confront system challenges. Sources include traditional RGB or infrared imagery captured by field crews, airborne or satellite content providers, unmanned vehicles, terrestrial devices and more. Content includes imagery, lidar, multispectral, video, and 360 image and point cloud data. Utilities are quickly increasing imagery and point cloud content that can be coupled with geospatial data to empower field crews, planners, operations personnel and executives to drive modernization initiatives across UIGA's four pillars in service of safety, affordability, reliability and resilience.

A VISION TO MODERNIZE THE 4 PILLARS

The vision for modernizing utility operations extends beyond simply replacing traditional inspection methods. It requires a strategic approach to capturing, managing and operationalizing imagery, lidar and geospatial data as enterprise assets that support asset inspection, vegetation management, wildfire mitigation and storm response. By integrating high-quality imagery with



Source: U.S. Energy Information Administration. https://www.eia.gov/electricity/annual/table.php?t=epa_11_01.html

geospatial intelligence, utilities can streamline critical workflows, improve situational awareness, and create a more accurate and complete understanding of their infrastructure networks. Supported by proven best practices and scalable investments in data acquisition, management and analytics, utilities can better address the growing challenges posed by extreme weather, aging infrastructure, rising electricity demand and increasing regulatory expectations.

Imagery and point cloud data have become foundational to the next generation of AI-driven utility operations. Advanced analytics, machine learning and automation capabilities depend on accurate, current and repeatable sources of reality capture data to deliver meaningful outcomes. Establishing a consistent enterprise strategy for imagery and geospatial data creates the trusted digital foundation required to support predictive maintenance, risk-based asset management, automated vegetation assessments, wildfire risk analysis and faster storm restoration. Never before have utilities had access to such a broad range of technologies for collecting and leveraging imagery at scale. Organizations that embrace this modern, intelligence-driven approach will be best positioned to improve reliability, enhance safety, increase operational efficiency and build a more resilient grid for the future.

Geospatially accurate image data acquisition

Established and emerging data collection technologies produce imagery and point cloud data that can be leveraged for 3D spatial measurements and comprehensive locational data tied to specific assets and objects around assets, such as trees or buildings.

- *Lidar and camera sensors, including terrestrial, vehicle, drone based, fixed wing and helicopter*
- *Satellites with multiple resolutions and spectral band combinations*
- *Video-, photo- and lidar-enabled drones*
- *In-situ devices, such as sensors and cameras mounted to infrastructure*
- *Apps on cell phones or tablets used by workers in the field*

Geospatial data management

Software and digital services can break down old utility department silos and version control issues to ensure geospatial data is usable, easily accessible and trustworthy for teams across the enterprise.

- *Data ingestion interfaces that ensure accurate automated or manual entry of quality data*
- *Single version of data truth that can be shared across the entire organization*
- *Edge computing*
- *Scalable, on-premise and cloud-based*

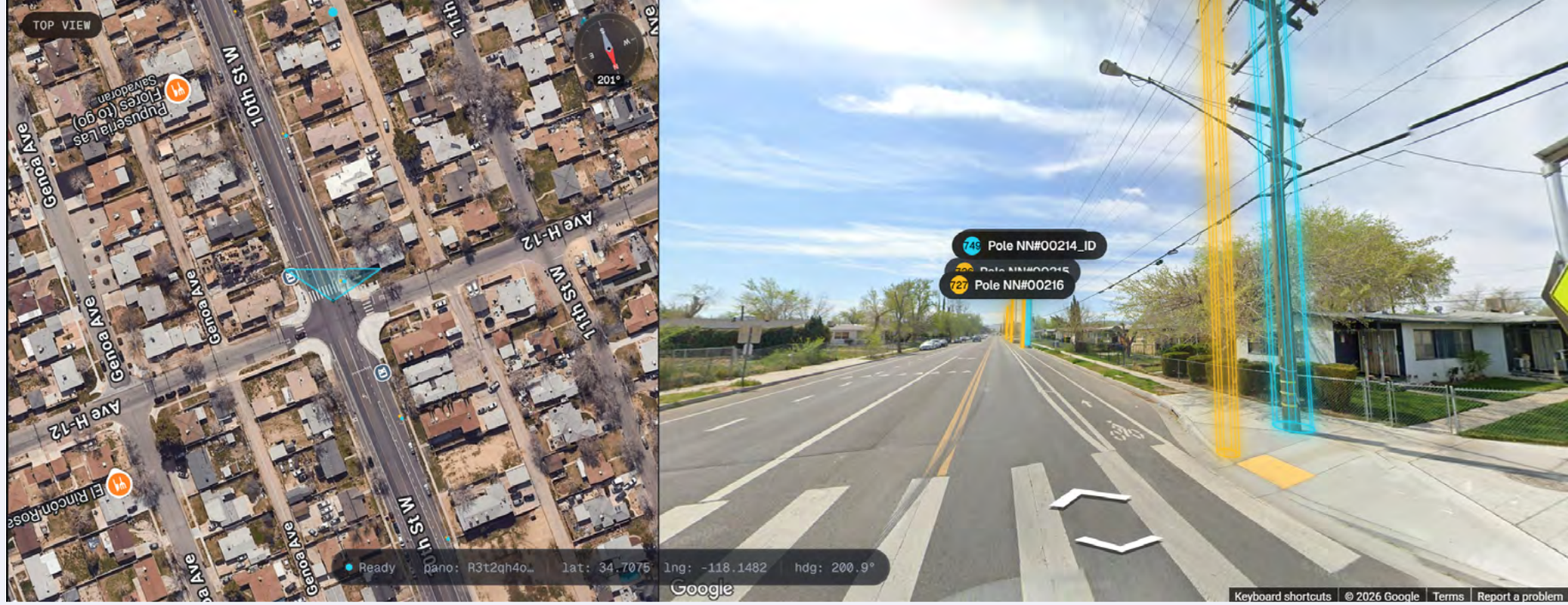
data storage platforms (data warehouses, data lakes, data lakehouses) configured around the business use case

- *Open data standards that provide standard application-based data access across all user interfaces*
- *Agentic AI concierges to connect data across systems, streamline data work flows, and improve data access and discoverability across all viable platforms*

Geospatial data applications

The ecosystem of advanced data acquisition and management technologies enables cutting-edge capabilities to use valuable data to modernize operations across UIGA's four pillars. The ability to leverage the value of imagery and point cloud data is now scalable and available to all users, whether you have 20 users or 20,000 users.

- *Point cloud-based 3D models, digital twins of assets and networks of assets*
- *Comprehensive single-point-of-entry apps that connect and combine all asset data to improve efficiency of field work and help the user understand the implications of the asset against event and network conditions*
- *Field applications that work in concert with operations or engineering teams in the office, providing real-time information on conditions and status of the work at hand*
- *Asset performance and enterprise asset management*
- *Machine learning*
- *Predictive services (e.g., optimized scheduling of asset maintenance or tree trimming; identification of unhealthy trees that pose higher risk during extreme weather)*
- *Automation powered by AI-based workflows and efficiencies, leveraging proven AI tools and models.*



By modernizing the acquisition, management and application of imagery and geospatial data, utilities can improve operational efficiency, reduce costs, optimize asset performance and strengthen resilience. This foundation enables more effective asset inspection, vegetation management, wildfire mitigation and storm response while addressing growing workforce and regulatory challenges.

Rather than relying on time-consuming field inspections, utilities can leverage geospatial intelligence, AI and automated analytics to identify risks, prioritize actions and direct resources where they deliver the greatest value. The result is a shift from reactive maintenance to proactive, intelligence-driven operations that improve reliability, safety and overall system performance.

Fundamentals for Maximizing Imagery Data Value

From photographs captured by field personnel on mobile devices to high-resolution aerial imagery and lidar collected across thousands of miles of infrastructure, utilities are generating more imagery data than ever before. While advances in data collection technologies have made acquiring imagery easier and more affordable, simply collecting more data does not create value. To realize meaningful operational outcomes, utilities must establish a clear strategy for how imagery and lidar content are captured, governed, managed and made accessible across the organization.

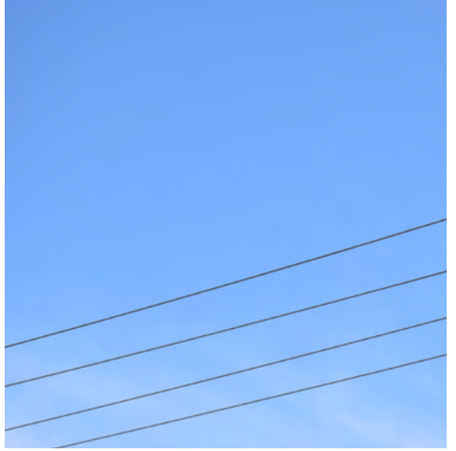
As outlined in the vision for modernizing asset inspection, vegetation management, wildfire mitigation, and storm restoration, the true value of imagery lies in its integration with geospatial data and business workflows. When managed as an enterprise asset, imagery provides a trusted foundation for decision-making that:

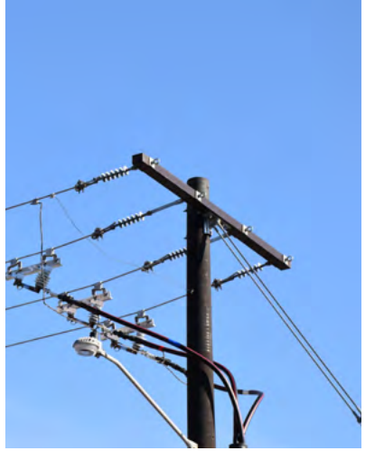
1) *Enables advanced applications, analytics, machine learning and AI-driven automation that improve operational efficiency, accuracy and decision-making.*

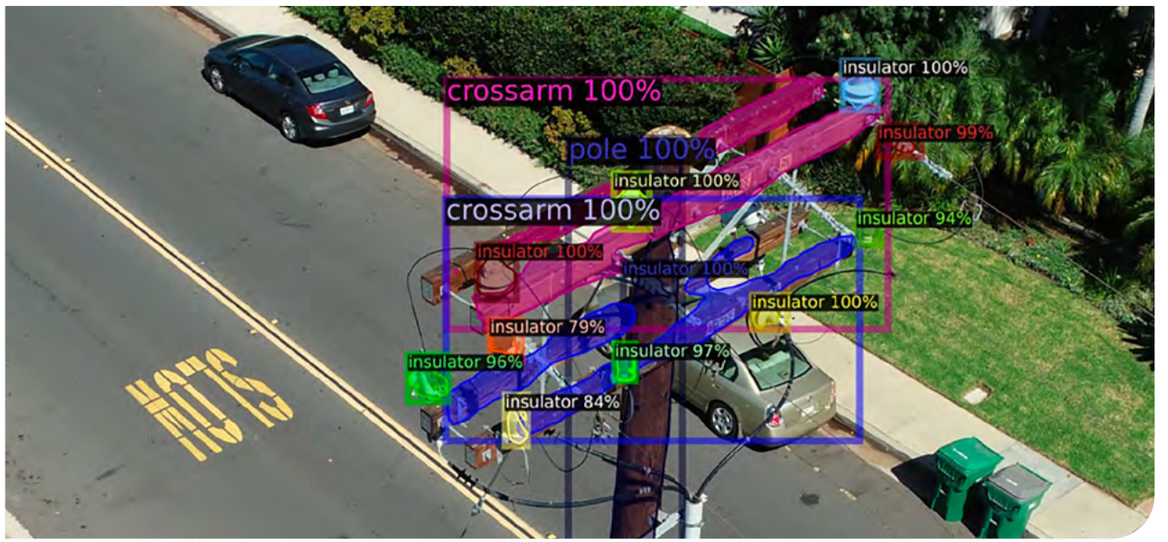
2) *Eliminates data silos across teams and systems, creating a unified view of infrastructure, risk and operational performance throughout the organization.*

IMAGERY ACQUISITION

Imagery acquisition is defined by the methods used to collect data, the types of imagery captured and the data products required to support specific business outcomes. The most effective acquisition strategy aligns the right data and collection approach to the business need, whether for asset inspection, vegetation management, wildfire mitigation, storm response or infrastructure planning.







Modes of data capture include:

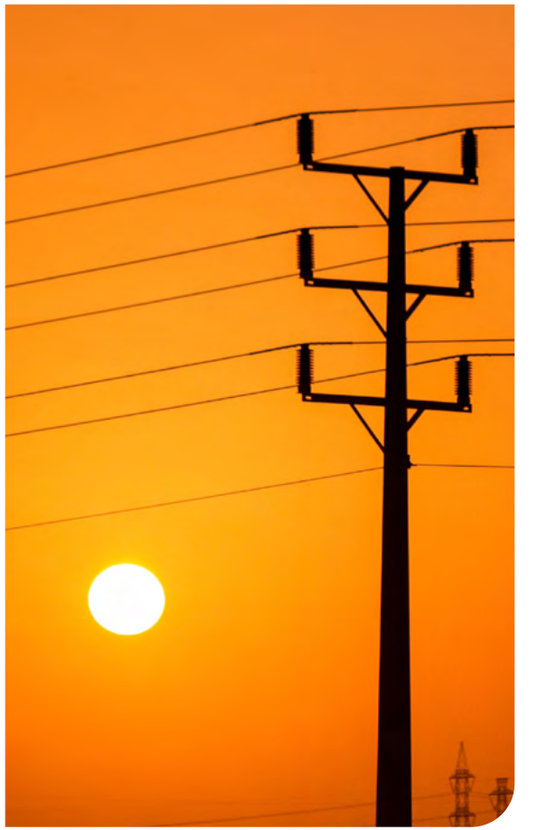
- *Satellite*
- *Fixed wing / helicopter*
- *Unmanned aerial vehicles (UAVs)*
- *Bathymetric unmanned surface vehicles (USVs)*
- *Vehicle mounted (trains, cars, SUVs, utility vehicles, bikes, ATVs and other mapping platforms)*
- *Robotic or autonomous ground vehicles (robotic rovers, inspection robots, indoor mobile robots and facility mapping systems)*
- *Fixed location field devices, (terrestial lidar, security monitoring cameras, asset-mounted cameras and environmental monitoring cameras)*
- *Handheld tools used by crews (mobile phones, tablets, backpack collection systems, SLAM Scanners and inspection cameras)*

Types of data include:

- *Individual images (oriented, geotagged, inspection, 360-degree typically asset specific)*
- *Photogrammetric (2D or 3D image data product focus), with emphasis on map accuracy; work seamlessly in common GIS applications for measurement, analysis and visualization; and support 2D and 3D digital twin products*
- *Lidar data capture (3D point cloud product focus), supporting map or survey-grade spatial accuracy and ideal for capturing very accurate representations of infrastructure, asset geometry, elevation, vegetation and high-accuracy surface data products*
- *Reality mapping images and point clouds (3D content focus), which combines imagery and point cloud data capture focused on 2D, 2.5D and 3D as-built representations of assets and all things around them with a high degree of map accuracy*

In addition to types of data, utility leaders should be familiar with common image and 3D-based products available to serve their asset inspection needs.

- *Geotagged image: A single image that has a 3D location (when appropriate meta data is provided) and can be tagged and located against GIS requirements.*
- *Oriented image: An image captured to evaluate a component or piece of equipment within an electric circuit. When it includes the appropriate metadata (XIF, IMU, etc.), it provides the camera position, orientation, field of view, acquisition date and related surrounding context. This allows the user to know where it was when data was captured, what angle the camera was pointing, the date and time of day, and the type of camera used. All of those variables are critical to get the full value from image AI workflows in the future.*



- *2D digital true ortho image maps: A product in which a sensor is used to collect a block of images for a specified area of interest, based on a predetermined flight specification, to create a single 2D ortho image map-accurate data set that can be tiled and deployed across use cases. If done properly, the data capture creates a map-accurate image data set with focus on the electric infrastructure that was collected with the sensor.*
- *3D digital image mesh or gaussian splat: A photorealistic, 3D geometric surface built from high-resolution, overlapping photos of utility assets collected by a sensor. Software matches pixels across multiple photos to calculate depth, creating a dense point cloud that is triangulated into a continuous 3D polygon mesh that can be used to map, monitor and manage infrastructure like power lines.*
- *Lidar-derived surfaces and products: digital terrain models, digital surface models, intensity rasters, hillshade, slope, aspect, contours, classified point clouds and point cloud scene layers used for visualization and analysis.*

IMAGERY DATA MANAGEMENT

Imagery data management should be designed to catalog and serve large collections of imagery, video and lidar data at any scale in both 2D and 3D contexts. Effective management includes automated processing routines that work from established data governance rules to properly support cataloging, querying, loading data models and rendering imagery for enterprise use cases. It provides user access through web services and on-the-fly processing for visualization, exploitation and analysis. Those features unlock information for use across the many needs of an enterprise, meeting users where they are, while supporting a vision to scale further into modernized cloud capabilities.

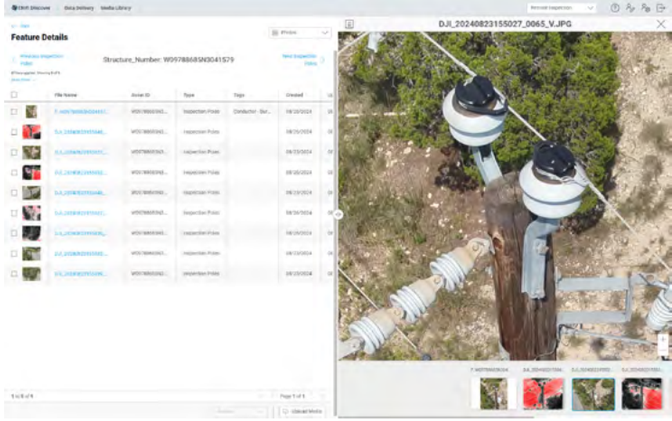
Image data management and processing architecture needs to be scalable to support data capture workflows and end-user application requirements that support thousands of users consuming data simultaneously for their specific business needs.

IMAGERY APPLICATIONS AND WORKFLOWS

Once the foundations of imagery data acquisition, management and applied use cases are in place, imagery can serve as a cornerstone to modernize operations across UIGA's four pillars.

Asset Inspection and Monitoring

Imagery and lidar data — provided in an accurate geospatial context — improve the overall accuracy of the asset and how it is deployed in the field, including:



- *Spatial location accuracy of your assets within inches, instead of within 500-1,000 feet. Inaccuracy is still a very common problem with electric utilities, causing inaccurate counts on poles and structures, inaccurate location of equipment within the circuit, assets listed in wrong tax districts (other side of the road) and inaccurate counts on equipment.*
- *Content accuracy, eliminating errors such as a transformer or recloser being recorded on the incorrect pole.*

- *Spatial-related threat awareness based on an asset's location in the circuit, which could apply to proximity to flood zones, coastlines with higher average winds and saltwater spray, nesting areas for large birds or unique geographical variables, such as a large elevation drop next to the structure.*

Vegetation Management

Defining stronger workflows that leverage imagery or lidar data to more accurately define where true vegetation threats exist provides insights needed to address vegetation issues through prescriptive workflows, instead of hoping to catch them in three- or five-year time-based inspection cycles. Proper planning and use of accurate imagery or lidar data — and simple analytics applied to these sources of data — can provide a more cost-effective work strategy for mitigating vegetation issues through a more prescriptive, prioritized approach.

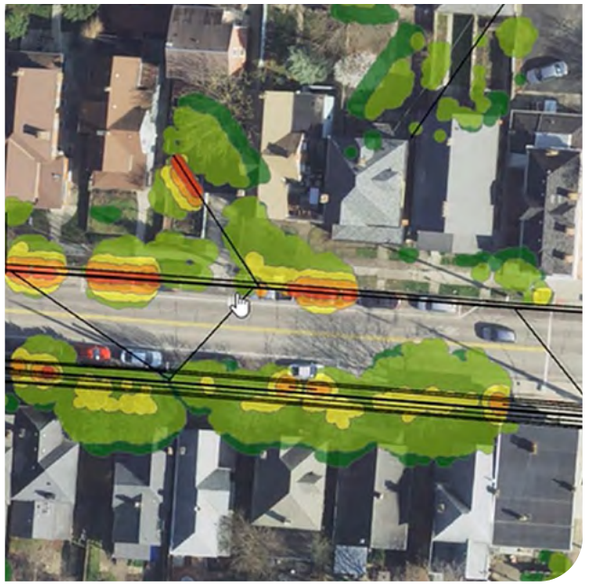
Wildfire Mitigation

Utilities need to understand how to evaluate and manage risks that impact specific portions of their networks. Risk factors include land use, terrain impacts, water sources, access roads and more. Targeted plans for critical assets that help utilities understand how overall risks can be supported with imagery and lidar data that is captured on a regular basis to set a foundation and to create an ongoing understanding of changes that impact risk. Utilities at the leading edge of risk mitigation also perform a third level of data capture, which includes specific detailed inspection images of equipment such as switches, reclosers and insulators with heightened risks of causing fires or safety hazards to customers and crews.

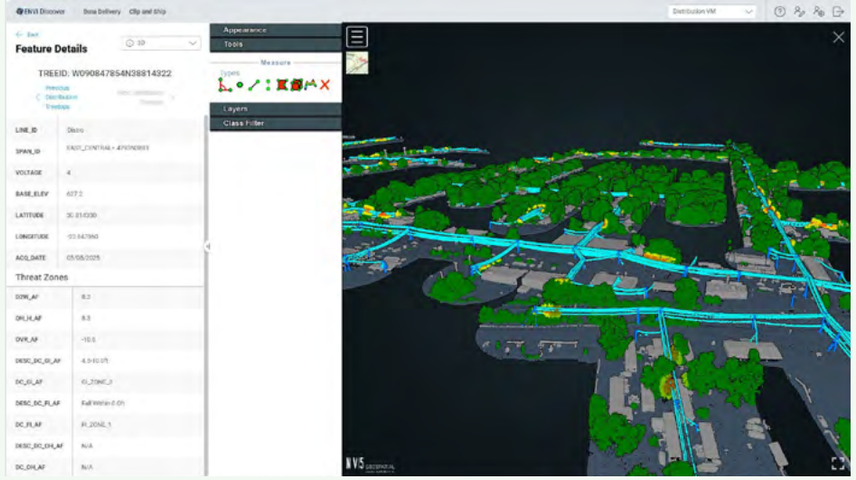
Storm Recovery

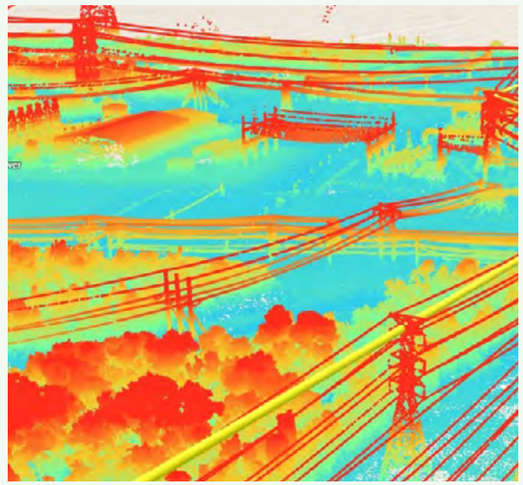
Utilities leaders need an effective strategy and workflows for evaluating the breadth of major event impacts and how quickly operations can recover. Many utilities already leverage situational geospatial dashboards — on which images are used every minute — that show crew locations and live real-time feedback. For those utilities, when a field crew runs into a downed tree and has to reroute to a repair location, it sends a snapshot of the tree back to the home base to get a tree crew out to remove the tree. In addition, utilities with these dashboards can evaluate storm damage in central crisis response rooms with images that show damage to different parts of the network in real time.

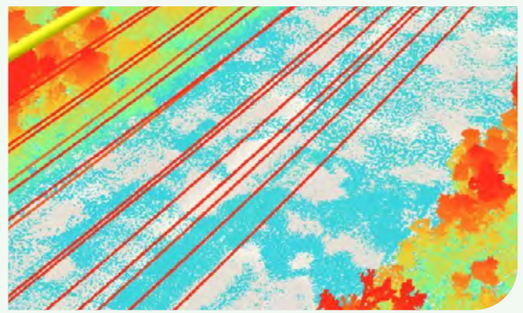
In all four of those areas of operation, effective data acquisition, management and applied use cases enable modernized imagery applications and workflows that, in turn, deliver more value across utilities' core business drivers: reliability, resilience, safety and compliance.



9 Best Practices to Turn Asset Data into Enterprise-wide Value







Whether your utility is establishing its first strategic vision for asset inspection and reality capture or expanding mature geospatial and imagery programs, the greatest value is achieved when data is managed as an enterprise asset rather than a project-specific resource. The organizations realizing the most significant operational, reliability and financial benefits are those that create a foundation for sharing, governing and applying imagery, lidar and geospatial data across multiple business functions and workflows.

The following best practices provide a framework for transforming imagery and geospatial content into enterprise-wide value. By adopting these principles, utilities can break down data silos, accelerate decision-making, support AI-driven innovation and maximize the return on their investments.

Best Practice #1

All of your modernization initiatives — including using new geospatial approaches to leverage new imagery and lidar data collection capabilities — should be rooted in the resolution of specific business problems that impact the KPIs and goals of the operation. This will set up initiatives to deliver real business value and ROI.

Best Practice #2

Establish a baseline of geospatial data for the entire system of assets — what some utilities might call a “system of record” — so that teams across the organization have an accurate, accessible source of data truth for assets. Imagery and lidar data should be considered an enterprise asset that is available to all departments across the organization.

Best Practice #3

Create an enterprise imagery strategy that will guide the creation of effective data capture and management processes and architecture. The strategy should result in data organized for collaboration across the operation, advanced machine learning and AI capabilities — even if your utility is not

yet ready to begin automated or predictive asset management. It should include a well-planned, scalable architecture that will grow and evolve as your workflows become more streamlined and efficient. Imagery and 3D data set the foundation for future AI and living digital twin requirements. Shared accurate geospatial content is already proving to be a significant game changer for operations that leverage that approach.

Best Practice #4

Choose third-party technology vendors and service providers that:

- *Are forward-thinking partners*
- *View themselves as a part of the overall ecosystem, not a one-stop-shop that can solve everything*
- *Have a proven ability to help utilities manage their unique internal and external challenges. These vendors have proven their worth and can be trusted advisors as you modernize your geospatial approach across the organization. Aligning with these types of partners leads to better adoption of new technology and processes and drives more value from modernization efforts.*

Best Practice #5

Start small on new legs of a modernization strategy through pilot programs and other means before scaling. Pilots and small-scale-first strategies are critical for three reasons:

1) They help leaders measure ROI and demonstrate impact before making a request to the board or regulators for permission to make a big bet.

2) They help third-party technology and service providers better understand the utility so that they are more effective partners when it's time to scale.

3) They allow utilities to practice new geospatial data-powered capabilities before they rely on it for service. Utilities must fully trust their practices and processes to ensure safety and reliability.

Best Practice #6

Break down utility department silos and solve version control issues that hinder the adoption and efficiency of modernized asset inspection practices. These efforts fall into two categories:

1) Use data platform-connecting systems and technologies, such as agentic AI, to make geospatial data available and easily accessible to teams across the enterprise.

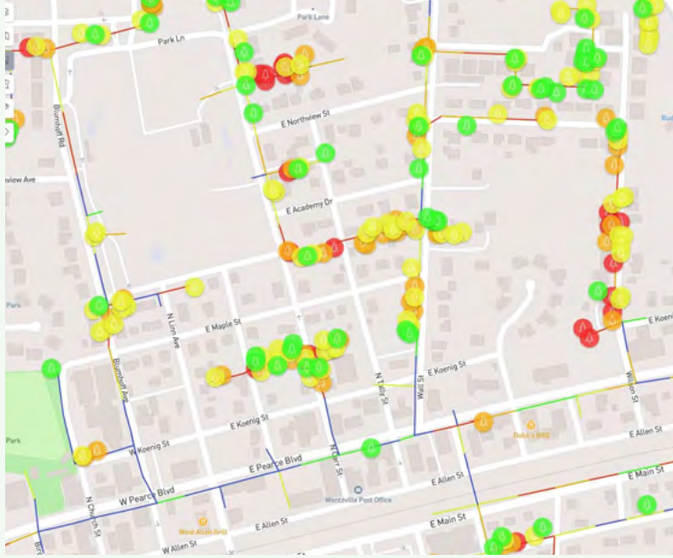
2) Ensure data is consolidated in one connected ecosystem and verified across different business units, rather than creating data silos that lead to duplicative efforts and disconnects between teams.

Best Practice #7

Modernize workflows to take advantage of new technologies and automation for more informed decision-making and improved asset performance. Old manual processes and workflows aren't suited for the future of asset inspection.

Best Practice #8

Create seamless and simple environments to access data and use it in the ways workers need to do their jobs. A field worker inspecting distribution poles in a community wants all of the data available on every pole; he or she doesn't want to search through five different apps to find five different classes of data about the same pole.



Best Practice #9

Facilitate experience-sharing opportunities and centers of excellence to increase workforce adoption of modernization efforts and confidence in the benefits.

How to Create a Roadmap to Modernize Asset Inspection

For many utilities, the challenge is not recognizing the need to modernize asset inspections but understanding where to start and how to prioritize investments that deliver measurable business outcomes. The gap between traditional inspection practices and modern, intelligence- driven operations can seem significant. However, a successful modernization strategy begins with a clear understanding of current capabilities, future objectives, operational challenges and desired business outcomes.

Developing a modernization roadmap requires utility leaders to evaluate how imagery, lidar, geospatial data, analytics and AI can be leveraged to improve asset performance, reliability, safety and operational efficiency. By asking the right strategic, operational and technical questions, organizations can identify capability gaps, establish priorities and create a phased approach that aligns investments with business value. The following questions can help utilities define a practical and achievable roadmap for transforming asset inspections from reactive, field-centric processes into proactive, data-driven operations.

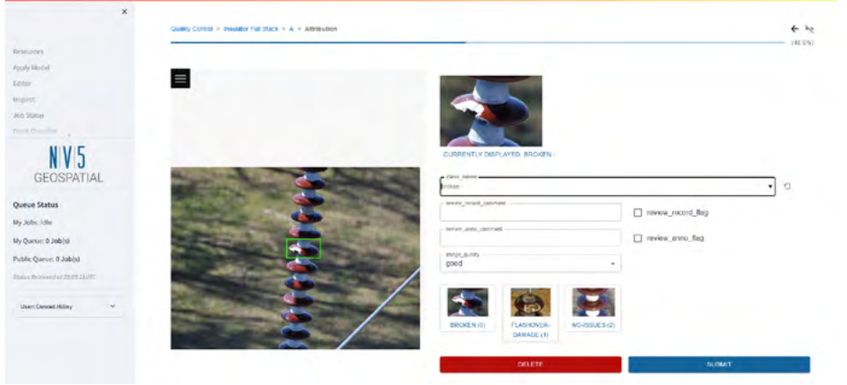
- *What are the top risks to my system of assets and where on the system are those risks located?*
- *What are the specific business problems I want to solve and what goals or purposes do I want to serve?*
- *Where does my organization stand in its journey to modernize asset inspection and maintenance?*
- *Is my utility's current data accurate, and do we have practices in place to ensure the data will remain trust-worthy and usable?*

- *What kind of asset imagery is my organization collecting and what modes are we using to collect it?*
- *Do teams across my utility use common language and consistent definitions when performing asset planning, inspection and maintenance — or do they use different definitions that could complicate data management and advanced applications?*
- *What workforce training, upskilling or hiring does my organization need to make sure teams across the enterprise are maximizing the value of modernization investments?*
- *How do I squeeze the most enterprise value out of the various GIS, ERP and document management systems already used by my organization?*
- *What investments require the least amount of money to get the most value?*
- *What do third-party technology partners and service providers need to know before I hire them?*
- *Who will own the data when a contract with a third-party vendor ends?*

NO REGRETS ACTIONS TO GET STARTED NOW

Creating a modernization roadmap takes time, but utilities do not need to wait to begin realizing value. As organizations assess priorities and define their long-term strategy, there are several no-regrets actions that can deliver immediate benefits while supporting future objectives. Investments in imagery acquisition, lidar and reality capture, geospatial integration and enterprise data management establish a trusted foundation for modernization regardless of the path ahead. By acting now, utilities can improve visibility, enable future AI-driven workflows, and accelerate progress toward more proactive, efficient and resilient operations.

- *Set standards for collecting and managing data in ways that will support the utility's future needs, such as 3D models and digital twins. It is never too early for data cleansing and good data governance, and virtually any project that supports structured, useful and curated data will help in the future.*
- *Create accurate asset inventories with accurate geospatial data attached to the assets in the database via asset IDs. Asset inventories with linked data are foundational to enable future efficiencies and automation.*
- *Initiate working groups and other initiatives to break down siloes of data, teams and operations.*



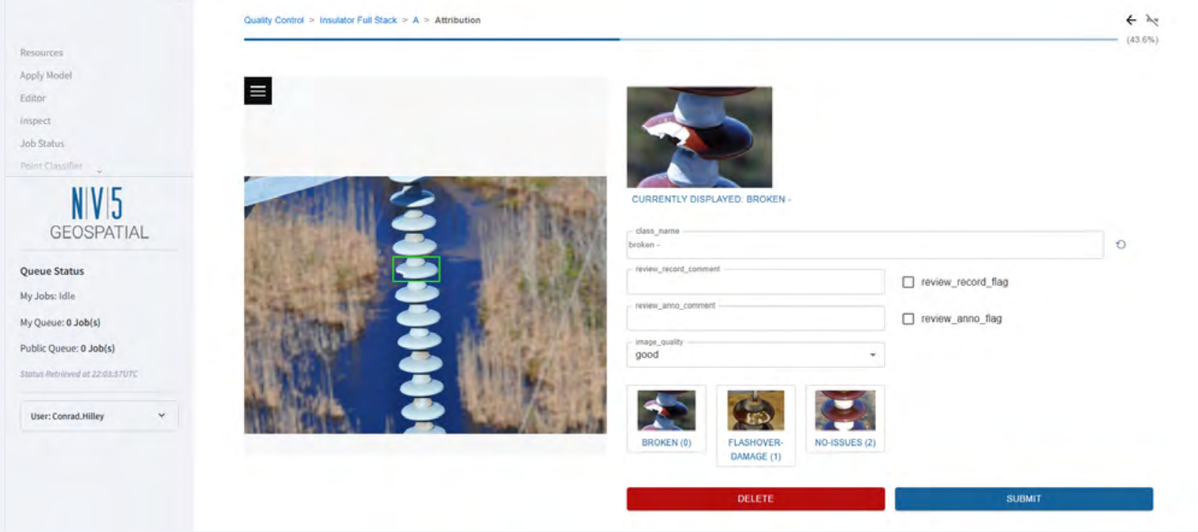
- *Idenfity workflows and processes that do not take advantage of new, proven technology capabilities, and strongly consider redesigning these processes soon.*
- *Analyze specific risks that are significant to your utility and make a mitigation plan for them. For example, wildfire risks are increasing in many areas, which makes ensuring data needed to address wildfire risks is current and mapping high wildfire risk areas no-regrets actions.*

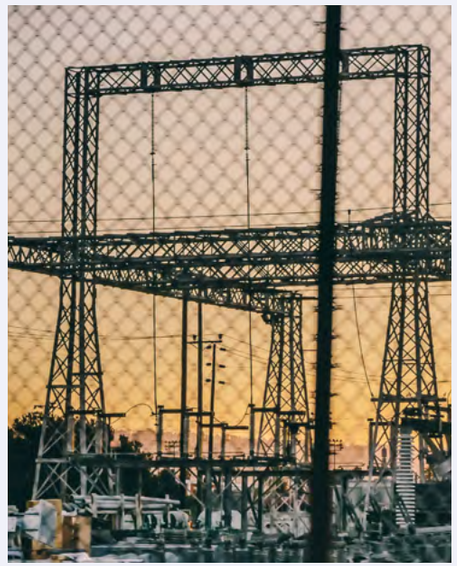
Bottom-line Business Benefits

Modernizing asset inspection, vegetation management, wildfire mitigation and storm response is no longer optional. As utilities face increasing pressure from aging infrastructure, extreme weather and rising demand, modernization is essential to improve reliability, resilience and operational performance.

To justify investment, modernization initiatives must deliver measurable business outcomes. By effectively capturing, managing and applying imagery, lidar and geospatial data across UIGA's four pillars, utilities can achieve significant returns through improved efficiency, reduced costs, lower risk and optimized asset performance. The following benefits highlight the enterprise-wide value of modernization.

- ***Reduced outages*** *through more effective asset inspection, vegetation management, wildfire mitigation and storm restoration*
- ***Improved regulatory compliance*** *through the ability of imagery connected to geospatial data to create easily accessed audit trails and other documentation*
- ***Reduced regulatory and legal risk*** *through better mitigation and quicker response to major events*
- ***Extended asset life,*** *which reduces capital expenditures and makes infrastructure investment plans more manageable*
- ***Optimized asset performance,*** *which reduces asset downtime and operating expenses while maximizing operating revenue*
- ***Enabled automation*** *through data capture, management and processing structures that are required for the effective use of machine learning and AI*
- ***Reduced administrative expenses*** *via eliminating the need for different utility teams to purchase different systems and solutions*
- ***Saved time,*** *thanks to planning teams that no longer have to duplicate data collection and modeling efforts and field crews that benefit from improved data access and ease of use designed to fit how they do work.*





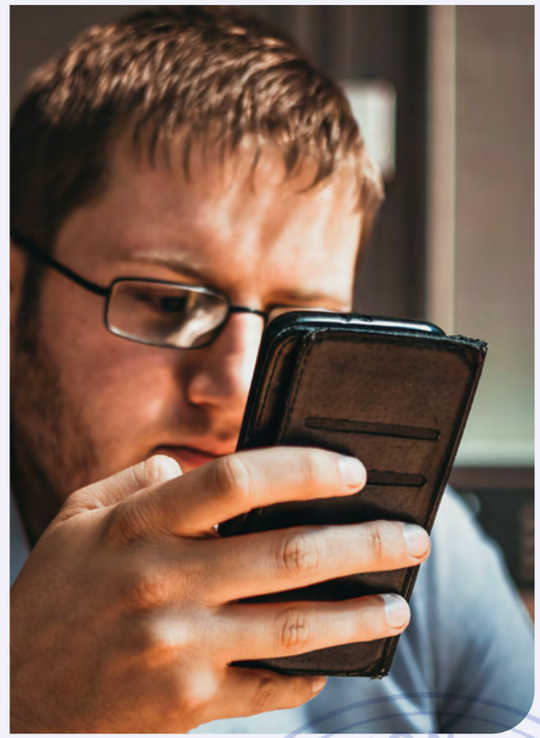
THE POWER OF PARTNERS TO UNLOCK THE FUTURE

Thanks to new hardware and software technologies, a paradigm shift is underway in how imagery and geospatial data is being collected and how it can be used. For utility leaders who have wondered when their data will translate into long-promised value, the time is now to refine and execute an asset inspection modernization roadmap.

Mature geospatial technologies and solutions exist to transform asset inspection from reactive to proactive, which enables the level of asset optimization required to control costs and preserve reliability amid all the challenges facing the grid.

A well-thought-out roadmap will reveal that no utility can modernize on its own. Successful initiatives require partnerships with third-party technology vendors and service providers that utility leaders can trust and that align their strengths with each utility's specific priorities.

How can utilities determine the right vendor to support their asset inspection, vegetation management, wildfire mitigation or storm restoration efforts? Ultimately, the right vendor choice is unique to each utility, but three strategies can help utility leaders identify the right partner.



1) Confirm that the vendor's hardware or software solutions are technology agnostic, connecting and communicating with other technologies regardless of whether or not they come from other vendors. Walled gardens can limit your utility's flexibility and asset inspection capabilities over the long run.

2) Share your goals and problems with vendors and evaluate vendor options based on how well they articulate how their solutions fit your specific business needs.

3) Talk to leaders from other utilities and independent third parties about their past experiences with vendors and how they performed. UIGA is designed as a forum to help utility leaders do just that.

UIGA believes in connecting utilities to their peers and the right technology partners to better enable their transition into a more automated, digital grid. We are a coalition of utility, regulatory, association and solutions provider professionals committed to transforming utility approaches to asset inspection, vegetation management, wildfire mitigation and storm restoration.

Join UIGA's online public community

Request utility-only access

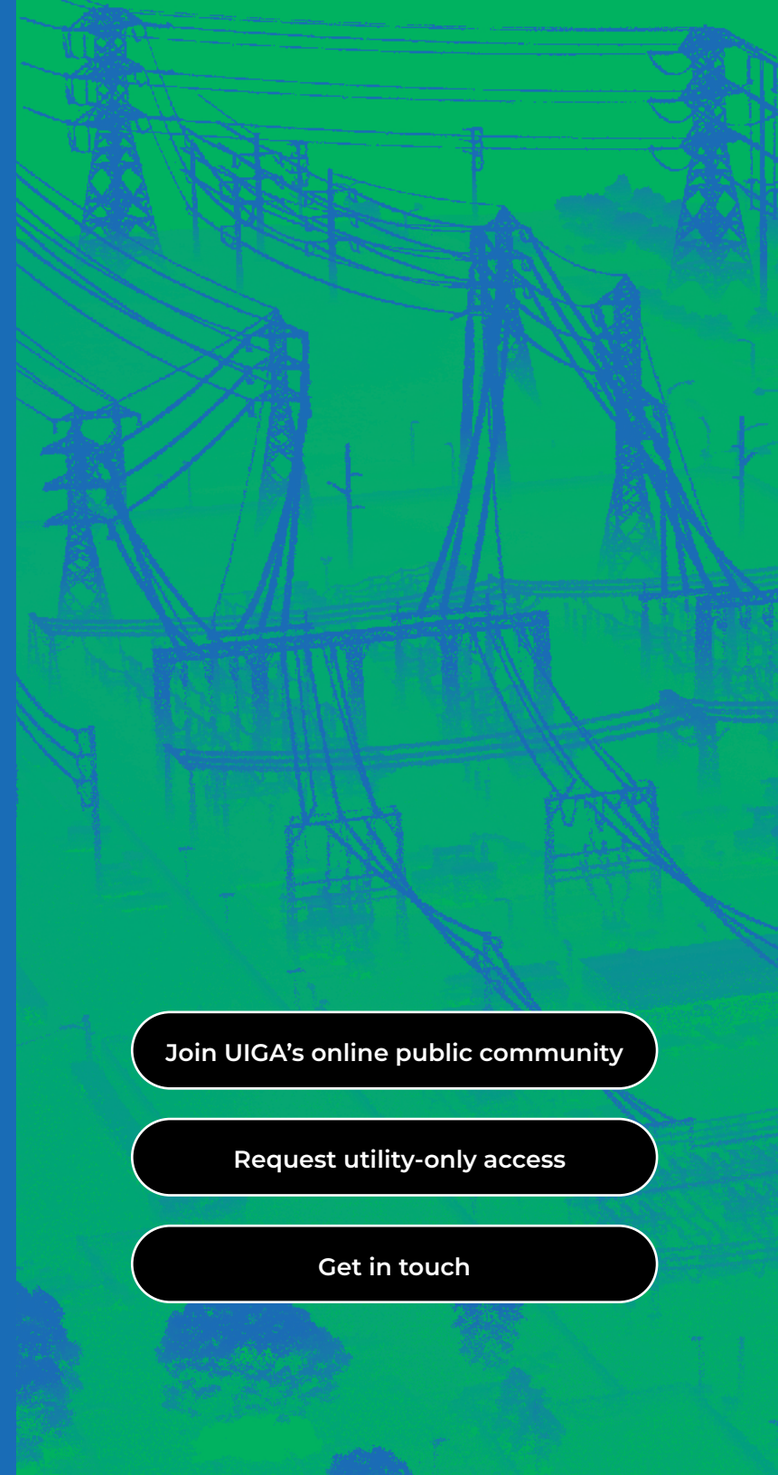
Get in touch

Resources

Utility Inspection & Geospatial Alliance

The utility inspection space is undergoing a rapid and fundamental change in its approach to the maintenance of healthy assets, vegetation management, storm response, and wildfire mitigation. UIGA strives to connect utilities to their peers and the right technology partners to better enable their transition into a more automated, digital grid.

utilityalliance.org



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