



# CYIENT

## EMPOWERING THE DIGITAL UTILITY WITH DATA-DRIVEN OPERATIONAL SOLUTIONS

From addressing supply and distribution issues to compliance challenges, we help utilities meet data and quality requirements that drive advanced distribution management systems





SUCCESSFULLY ENABLING  
CHANGE REQUIRES  
CAPABILITIES IN DATA,  
PROCESS, AND OPERATIONAL  
SYSTEMS. CYIENT  
UNDERTAKES SYSTEM-LEVEL  
OWNERSHIP TO PROVIDE  
DISCIPLINE-LEVEL SUPPORT  
TO CLIENTS THROUGH  
OUR ROBUST SERVICES  
PORTFOLIO—A FACT THAT  
HAS BEEN ATTESTED BY OUR  
LONG-STANDING CLIENT  
SUCCESS STORIES.

## Overview

The utility industry is undergoing significant technology-led disruptions and is facing critical challenges driven by regulatory pressures, resource optimization, and distributed generation, supply, and grid control. To respond to these challenges effectively, utilities today need to proactively focus on enhancing performance, efficiency, and innovation.

With our rich history and domain expertise, Cyient is well-positioned to help utility companies transform operations and ensure regulatory compliance. We collaborate with clients to support and deliver a wide range of end-to-end solutions and services across spatial, engineering, grid, and geospatial focus areas. Our solution portfolio for the utility market includes:



### Spatial Solutions

- Data Conflation
- Data Migration
- Data Management
- ArcGIS Utility Network Management



### Engineering Solutions

- Field Inventory
- Planning and Design
- Make-Ready Engineering
- PLS-CADD



### Grid Solutions

- ADMS Readiness: Data Quality and Governance
- Load Profile Modeling and Cleansing
- Smart Grid Analytics



### Geospatial Solutions

- Spatial Engineering
- UAV-Led Acquisition
- LiDAR Acquisition
- Image Processing
- Automated Feature Extraction

## The Cyient Edge

For more than 25 years, Cyient has been at the forefront of delivering leading-edge services and solutions for the utility industry. Our solutions leverage application-level tools in conjunction with advanced data management techniques to provide the breakthrough capabilities sought by utilities worldwide today. The following differentiators encapsulate the Cyient advantage:

### Size and credibility:

Cyient is a well-established and trusted organization with constant growth, and it is the largest pure software and data company focusing on utility solutions in the industry.

### Client focus:

We work with some of the most recognized and advanced utility clients in the world and pride ourselves for a 98% repeat business rate—a clear indication of the trusting and collaborative partnerships we have built with our clients over the years.

### Advanced applications:

Cyient can transform traditional utility design engineering and operations capabilities through advanced applications combining data, software, and process change.

### Regulatory and security compliance:

With advanced experience in cybersecurity compliance meeting stringent ITAR and nation-specific controls, Cyient maintains the highest levels of security compliance including ISO 27001 across the entire solution footprint.



# SPATIAL SOLUTIONS

With global advancements in technology and increasing emphasis on operational excellence and customer service, we continually align ourselves to meet the needs of utilities, and contribute significantly to helping them realize their vision.



## Key Offerings

Our enterprise spatial solutions provide an integrated systems view of business processes and ensure significant cost savings and increased revenues. By combining our asset data management capabilities with information technology (IT) and operational technology (OT), we bring tangible value and business benefits to core utility businesses. Our spatial solutions portfolio includes:

### Data Conflation:

We help utilities adjust their existing asset data and align it with a spatially accurate base map. Our hands-on approach to solving real-world geographic data inconsistencies is highly effective in maintaining accurate data in real time. Our in-house software tools utilize intelligent spatial shifting technology to automate conflation

processes and successfully resolve a range of challenges that utility, communications, and government organizations face today.

### Data Migration:

We help utilities across the world eliminate inefficiencies associated with bifurcated and varied data storage methods. Our solution ensures that unstructured data collected from multiple sources undergo a rigorous and well-defined process to remain being accurate, clean, and up-to-date. As a result, utilities can improve data quality, business rules, and productivity.

### Data Management:

We help ensure network data accuracy and quality in utilities' GIS and other operational systems. We actively leverage our U&G domain expertise and technologies, our global

delivery model, and robust processes to manage network updates in the GIS and other operational systems. This improves decision-making, asset network analysis, and outage management, leading to cost savings and productivity gains.

### ArcGIS Utility Network Management:

Our turnkey solution for system implementation includes UN model design, data migration, ArcGIS Pro/custom solutions, and integrations. A strategic technology partnership with Esri helps us adhere to model maturity standards and compliance as well as Esri's proposed industry certification "Utility Network Specialty," while ensuring alignment between our companies and with Esri's emerging certification protocols.

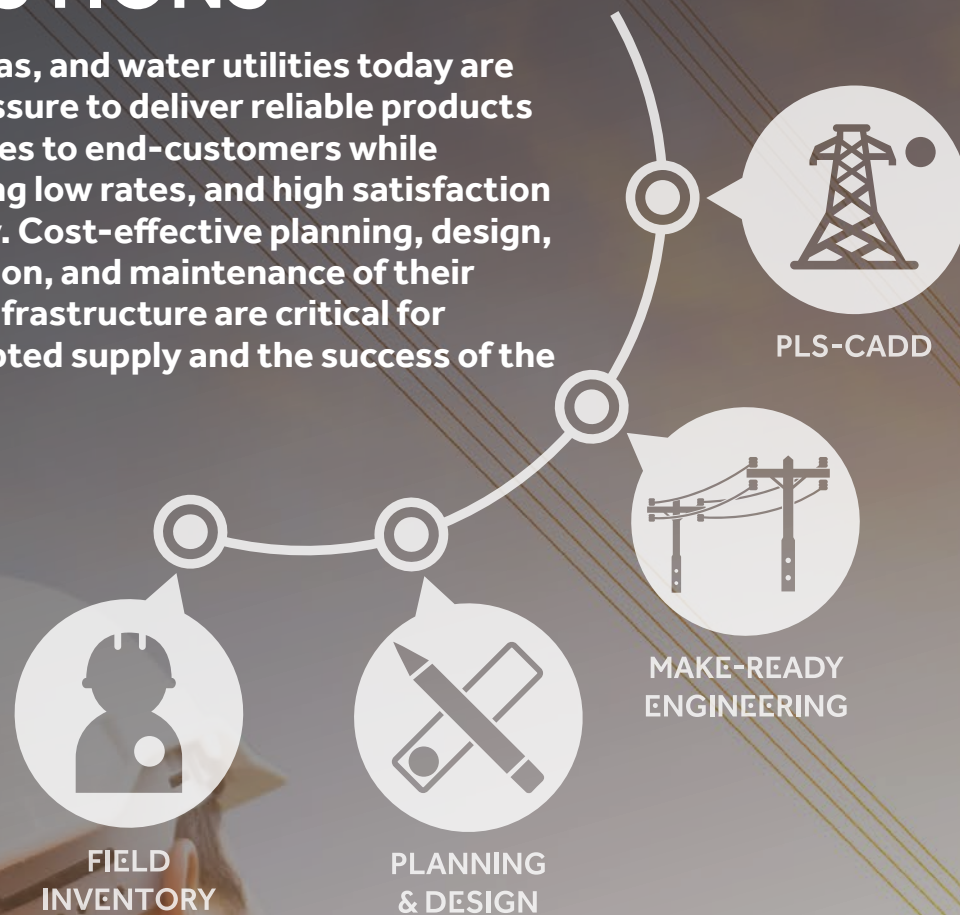
## Key Highlights

- 50 million+ customers conflated to spatially accurate location
- 20+ years of Esri Cornerstone Partnership
- Strong expertise in all industry-standard data models including design, development, and customization
- 22 million+ network elements migrated from legacy systems to enterprise GIS applications
- 12 million+ hours of experience in GIS implementation projects for utilities globally
- 500K+ work orders posted in GIS and other operational systems
- 99% on-time delivery and first-time acceptance rates



# ENGINEERING SOLUTIONS

Electric, gas, and water utilities today are under pressure to deliver reliable products and services to end-customers while maintaining low rates, and high satisfaction and safety. Cost-effective planning, design, construction, and maintenance of their delivery infrastructure are critical for uninterrupted supply and the success of the utility.



## Key Offerings

By combining strong utility domain experience with our core engineering DNA, we have been helping utilities improve their engineering and operations capabilities. Our solutions, tailor-made for the industry, offer high quality and efficient alternatives for utilities to complete projects and seamlessly continue operations. Our engineering solutions include:

### Field Inventory Management:

Cyient offers an end-to-end field inventory solution that leverages the secured field technology platform, strong field resource expertise, and large-scale data management acumen. Cyient's SmartHub solution is a comprehensive, secured, and integrated platform that supports all the aspects of field data collection, work package assignment, data collection, data management, and data validation activities. Cyient's field inventory services encompass field

data collection and verification of overhead and underground primary, secondary, and service network, and third-party attachments.

### Planning and Design:

For more than 25 years, we have helped utilities plan and design their electric and gas networks with our comprehensive tools and resources. By leveraging our extensive knowledge in design standards, processes, and systems, we are equipped to offer a broad spectrum of services—from planning to the 'as-built' update phase. Our services include planning preparation, site inspection, and network design utilizing GIS/GWD/SAP, reconciliation, and 'as-built' update in GIS systems.

### Make-Ready Engineering:

Cyient offers a series of tools and offerings to assist utilities in meeting the increase in demand for pole loading and design mitigation services. We have built a

comprehensive solution based on our utility engineering expertise and proven technical expertise in mobile technology. Cyient provides comprehensive "Make-Ready" services including structural strength analysis, design mitigation, remediation, work order design, and post-construction inspection.

### PLS-CADD:

Cyient offers deep expertise in Power Line Systems-Computer Aided Design and Drafting (PLS-CADD) design software incorporating terrain modeling, engineering, spotting, and drafting. Cyient excels at the 3D spatial relationship management of all the overhead structures, wires, and topographic data (terrain, vegetation, buildings, etc.). Our solutions provide easy, two-way interoperability between Esri and PLS-CADD environments for both image and vector data.

## Key Highlights

### Leverage resilient solutions:

Our solutions help utilities recover quickly from outages and restore power to end-customers promptly and efficiently by supporting upgrading, strengthening, and in some cases, undergrounding of the network.

### Respond to aging infrastructure:

Our field inspection and design services mitigate the challenges of aging infrastructure. These include aging cast iron and steel gas mains, increasing attachments causing pole loading requirements, and

water systems where over 50% of the infrastructure is reaching its end of life.

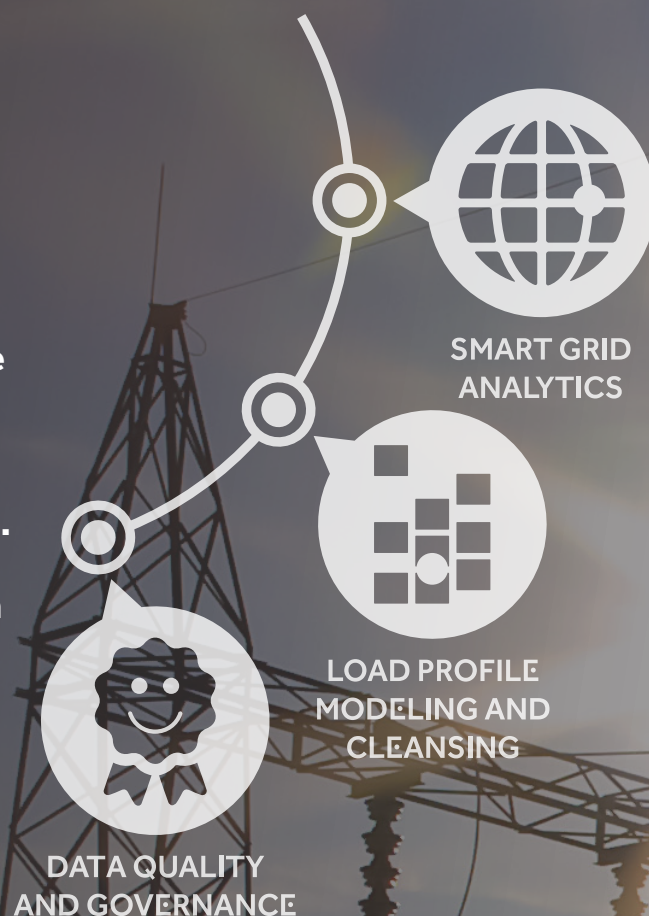
### Be future-ready:

Our engineers are adept with the convergence of IT and OT, and can seamlessly integrate GIS, ADMS, and AMI data into the engineering solution.



# GRID SOLUTIONS

Today's modern grids demand extremely high data availability and quality. An Advanced Distribution Management System (ADMS), for instance, integrates multiple utility systems and provides automated outage restoration and optimization of distribution grid performance. Data and advanced machine learning applications are essential to help the electric utility transition from manual processes and siloed software systems to integrated real-time solutions. Cyient helps utilities overcome poor data quality and data governance issues, which are often the leading cause of reduced efficiency of the grid.



## Utilities Face a Three-Pronged Data Hurdle

**Data Gaps:** ADMS requires additional, and traditionally uncollected, data to achieve advanced functionalities. For example, load flow calculation requires information about wire size, length, impedance, and transformer-rated kVA, etc.—information that had never been assessed in the past.

**Data Quality:** Utilities need to invest considerable time into data analysis, quality gaps, and identifying cleansing, collecting, and mapping activities across the distribution application systems such as GIS, CIS, and asset management system.

**Data Governance:** The need for robust data management and governance principles—people, processes, and technologies—are needed to keep the data current and consistent across all systems.

## Key Offerings

Cyient offers software solutions to improve ADMS readiness and success. Our intelligent Data Management Solution (iDMS) applies our rich knowledge of electrical network data models, connectivity rules, and the data requirements for advanced systems. The solution supports all the commercial off-the-shelf products and platforms through published APIs.

### Load Profiles Module:

Cyient's machine learning (ML) algorithms use SCADA, AMI, and other system devices, and advanced electrical algorithms to offer granular feeder and transformer load models at daily intervals. These algorithms support a host of load forecasting and real-time weather adjustment data to support advanced grid applications such as Distributed Energy Management and Load Modeling Systems.

### Data Governance Module:

This enables, measures, protects, and assures data quality such that it seamlessly helps meet business objectives for which the data is sought. The module allows:

- Identifying, monitoring, and recommending data condition reports based on data governance indicators such as quality, availability, and ownership
- Tracking performance against SLAs to review the overall improvement in the data quality and availability
- Providing dashboards to facilitate data quality monitoring and the drill down functionality to find the root cause of data ownership issues

### Data Validation and Correction Module:

This module allows users to validate data inputs critical to ensuring integrity and consistency of the electrical network dataset.

- User can select from 600+ rules library based on specific data model and data validation requirements
- Offers flexibility to choose from the existing rule library or to define new validation rules for execution
- Uses machine learning-based validations, which run on real-time data enabling the utility to determine data gaps to prepare for advanced systems

## Key Highlights

Utility companies can now operate smarter by leveraging our dedicated solutions and services. With these, utilities can:

Conduct full data analysis, document quality gaps, and identify cleansing, collection, and mapping activities across the current distribution applications revealing overlapping data needs.

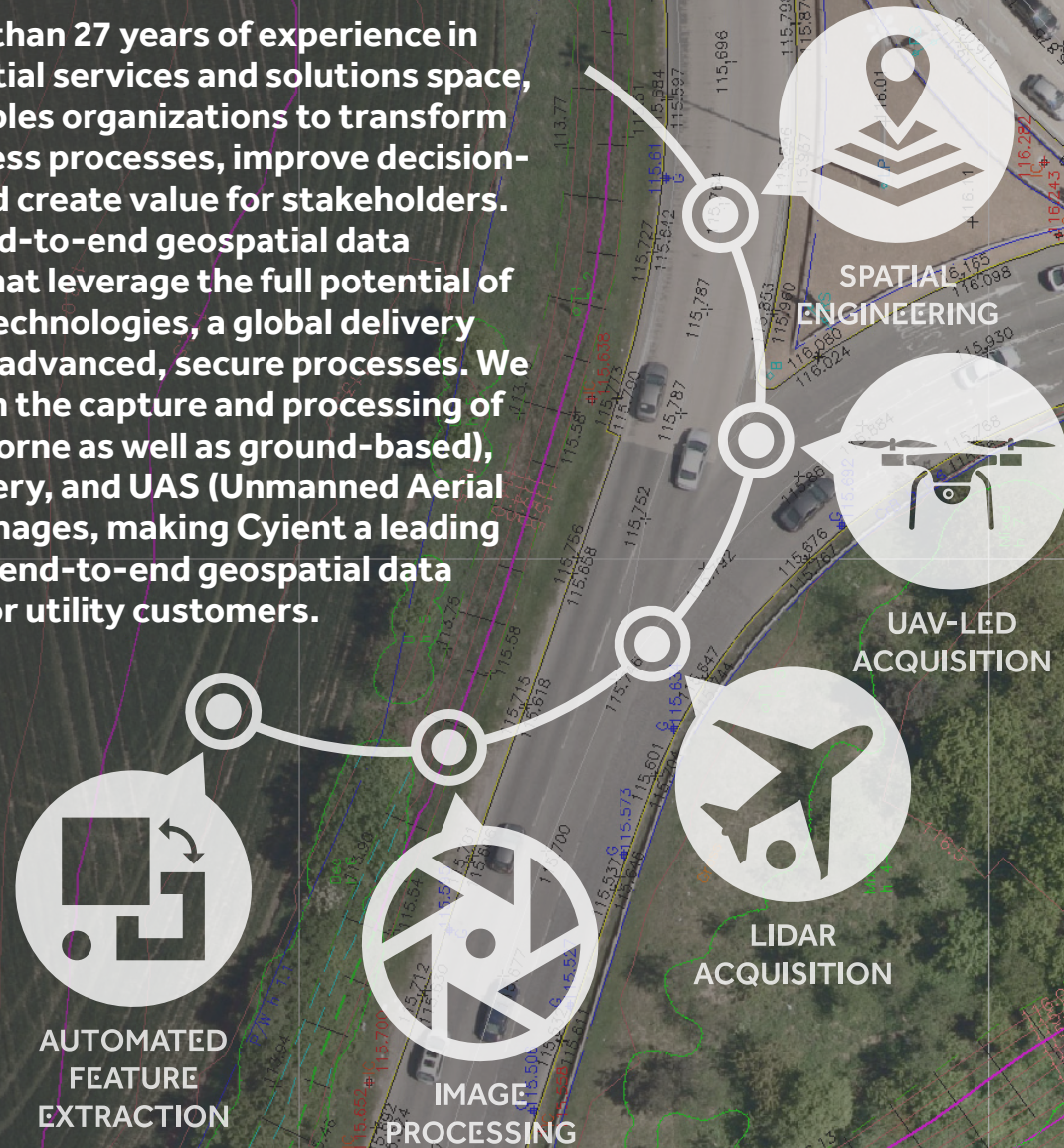
Define a data management strategy for data collection, cleansing, sustaining of the GIS model, and other data points required by ADMS that enables full business capabilities.

Define a data governance mechanism that provides the system and data owner with the authority and responsibility to assure data quality with the provision of dashboards that informatively visualize results.



# GEOSPATIAL SOLUTIONS

With more than 27 years of experience in the geospatial services and solutions space, Cyient enables organizations to transform their business processes, improve decision-making, and create value for stakeholders. We offer end-to-end geospatial data solutions that leverage the full potential of advanced technologies, a global delivery model, and advanced, secure processes. We specialize in the capture and processing of LiDAR (airborne as well as ground-based), aerial imagery, and UAS (Unmanned Aerial Systems) images, making Cyient a leading provider of end-to-end geospatial data solutions for utility customers.



## Key Offerings

Cyient's solutions address the aerial inspection needs and decision-making process for advanced utility asset maintenance. Data is acquired from multiple sources including mobile, airborne, and terrestrial, UAV, and enterprise to capture asset conditions in the field.

Cyient undertakes data processing using ISO 27001 security standards

leveraging advanced cloud-based operation centers. Our SmartHub solution synchronizes data between utility systems and its operational repository and shares only specific datasets to users such as field crew, engineers, and technicians.

Significant time and cost savings are delivered by leveraging advanced machine learning techniques.

To achieve this, traditional data processing tasks are automated, deploying advanced analytical techniques to vegetation imagery, sag and sway analysis, automatic identification of asset defects such as damaged insulator plates and bending poles, and encroachments into the right of way, among others. Key solution offerings include:



### Data Acquisition

- Mobile
- LiDAR
- Aerial imagery
- Oblique imagery
- UAV
- Enterprise data



### Mapping and Modeling

- 2D feature extraction and mapping
- 3D feature extraction and mapping
- 3D modeling
- Ground survey support



### 3D Virtual Assets

- 3D virtual maps
- Automated data processing
- View assets from desktop and mobile



### Analytical Apps

- Encroachments
- Sag and sway
- Growth model
- Automated damage detection



### Automated Reports

- Quantify work with volumetric analysis
- Review and report
- Integration with enterprise systems

## Key Highlights

### Improved operational efficiency:

- Precise visualization of network corridors
- Streamlined maintenance of assets and improved service reliability
- Integration with enterprise systems

### Reduced maintenance costs:

- Automated LiDAR data processing
- Automated asset detection and condition assessment
- Delayed data acquisition, leveraging intelligent vegetation growth modeling

### Improved revenue:

- Save up to \$1 million for every 1,000 miles of network
- Save up to 40% on asset inspection costs
- Eliminate millions of miles of travel, reducing related risks and costs



## About Cyient

Cyient (Estd: 1991, NSE: CYIENT) provides engineering, manufacturing, geospatial, networks, and operations management services to global industry leaders. We leverage the power of digital technology and advanced analytics capabilities, along with domain knowledge and technical expertise, to solve complex business problems. As a Design, Build, and Maintain partner, we take solution ownership across the value chain to help our clients focus on their core, innovate, and stay ahead of the curve.

Relationships lie at the heart of how we work. With more than 15,000 employees in 22 countries, we partner with clients to operate as part of their extended team, in ways that best suit their organization's culture and requirements. Our industry focus spans aerospace and defense, medical, telecommunications, rail transportation, semiconductor, utilities, industrial, energy and natural resources.

For more information, please visit  
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