

GIS Platform Modernisation for an Electricity Distribution Utility in India

Upgrading an enterprise GIS environment to support electricity distribution network operations, covering platform modernisation, application upgrades, database migration, web GIS, SAP integration and workflow migration.

Country	Project Type	Scope Areas	Enterprise Integration
India	GIS Platform Upgrade	7	SAP

Overview

An Electricity Distribution Utility in India required the modernisation of its enterprise GIS environment to support continued electricity distribution network operations. The utility manages critical infrastructure including substations, feeders, transformers, poles and consumer connectivity across its distribution network. Its enterprise GIS platform underpins geospatial asset management, network planning, maintenance operations and enterprise integrations with external business systems including SAP.

The project was a comprehensive GIS platform modernisation — not a simple version upgrade. Alongside the core platform, the engagement covered custom GIS applications, business processes, database migration, web GIS components, SAP integration, desktop and web GIS tools, and operational workflows. RedPlanet Solutions managed the full scope of this modernisation, delivering a coordinated upgrade across all components of the GIS environment to ensure the platform could continue to support the utility's evolving operational requirements.

The Challenge

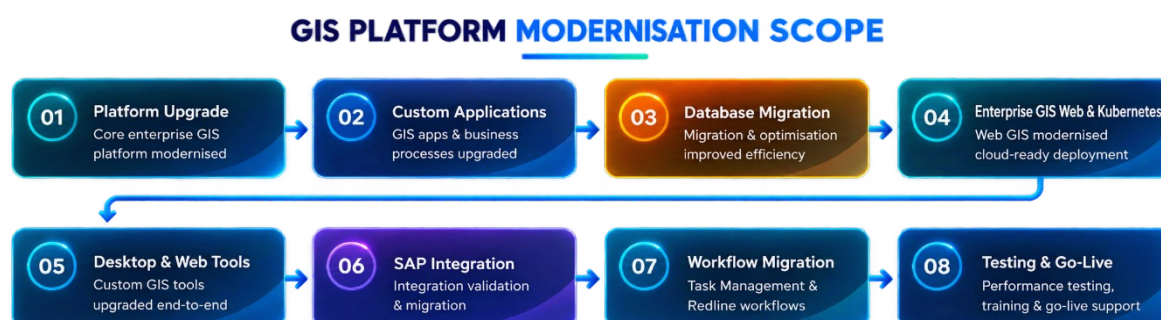
The utility's enterprise GIS environment had been built up over time, with multiple layers of custom applications, business processes, integrations and workflows operating on top of the core GIS platform. Upgrading the platform in isolation was not sufficient — every component that depended on the platform needed to be assessed, updated and validated as part of the modernisation programme.

The scope of supporting components that required upgrading alongside the core platform included:

- Custom GIS applications and integrated business processes
- Database migration and database optimisation
- Enterprise GIS Web upgrade and Kubernetes deployment setup
- SAP system integration validation and migration
- Custom desktop and web GIS tools
- Task Management and Redline workflow migration
- Performance testing, training and Go-Live support

Managing this breadth of interdependent components required a structured, coordinated approach to ensure that no component was left behind during the upgrade, and that the transition to the modernised platform was smooth and minimally disruptive to the utility's day-to-day operations.

GIS Platform Modernisation Scope



Project Scope

RedPlanet Solutions supported the GIS platform modernisation across seven structured work areas, each addressing a specific component of the GIS environment.

1. Enterprise GIS Platform Upgrade

The core enterprise GIS platform was upgraded to the current supported version, forming the technical foundation for the wider modernisation effort. This was the primary driver of the project and the baseline from which all other component upgrades were planned and executed.

2. Custom GIS Applications and Business Processes

The utility had developed a range of custom GIS applications and business processes built on top of the GIS platform. Each of these was assessed and upgraded to operate correctly within the modernised GIS environment, ensuring continuity of existing operational workflows and minimising re-training requirements for end users.

3. Database Migration and Optimisation

The database component of the GIS environment was migrated as part of the upgrade. Database optimisation activities were also included in scope, improving database efficiency and performance within the new platform environment. This contributed directly to the improved system performance outcomes achieved by the project.

4. Enterprise GIS Web and Kubernetes Deployment

The Enterprise GIS Web component of the GIS environment was upgraded as part of the web GIS modernisation. Kubernetes was introduced as the deployment framework for the web GIS environment, enabling a more scalable and operationally resilient deployment architecture to support ongoing Enterprise GIS Web operations.

5. SAP Integration

The utility's GIS environment was integrated with SAP to support enterprise asset management and operational workflows. As part of the upgrade, RedPlanet Solutions validated the SAP integration against the modernised GIS platform and migrated the integration to ensure continuity of enterprise data exchange between GIS and SAP throughout and after the upgrade.

6. Desktop and Web GIS Tools

Custom GIS tools used across both desktop and web environments were upgraded as part of the overall platform modernisation. This ensured that all tools available to GIS users continued to function correctly within the upgraded platform, maintaining operational capability across the user base without the need for significant re-tooling or retraining.

7. Workflow Migration and Deployment Support

Task Management and Redline workflows — operational GIS workflows used for field task coordination and network redlining — were migrated to the upgraded GIS platform. Following migration, performance testing was conducted to validate the platform under operational conditions, and training and Go-Live support were provided to facilitate a controlled and confident transition into live operations.

Project Outcomes



Technology Stack

- Enterprise GIS Platform (desktop · web · mobile) — core utility GIS environment
- Enterprise GIS Web — browser-based GIS access, deployed via Kubernetes
- Java Virtual Machine (JVM) · Docker · Node.js · JBOSS — application runtime environment
- SAP Integration — enterprise integration with SAP business systems
- Oracle Database — relational database platform
- GIS Web Services — spatial data services layer

Conclusion

The GIS platform modernisation project delivered a fully upgraded enterprise GIS environment for an Electricity Distribution Utility in India, modernising not only the core platform but the full ecosystem of custom applications, business processes, database components, web GIS, enterprise integrations, GIS tools and operational workflows that depended on it. The coordinated, seven-workstream approach ensured that every component of the GIS environment was brought forward to the new platform in a controlled manner, achieving improved system performance, scalability, database efficiency, enhanced web GIS capabilities and stronger SAP integration — while maintaining smooth business operations with minimal impact to users throughout the transition.