



Techwave established in 2004, is a global end-to-end IT services & solutions company, which develops long-term relationship with clients by leveraging unique delivery models and expert frameworks.

Simplifying Telecom Network Design Through AI powered Conversational GIS(QGIS)

Executive Summary

A leading telecommunications organization in Australia and New Zealand sought to improve the efficiency, consistency, and scalability of its network design operations. As projects expanded in complexity and volume, teams struggled with cumbersome GIS workflows, inconsistent processes, and heavy reliance on specialized expertise.

To address these challenges, the organization adopted an AI-powered conversational interface for QGIS that enabled users to perform complex geospatial tasks using natural language commands. The solution streamlined design workflows, reduced manual effort, accelerated onboarding, and improved the accuracy and consistency of network deliverables.

Client Need

Telecom network planning and design rely heavily on accurate geospatial data and efficient GIS workflows. However, as network deployments accelerated across the region, the organization faced increasing pressure to deliver projects faster while maintaining quality and consistency.

Design teams needed a way to simplify daily operations, reduce process variability, and enable a broader workforce to contribute effectively without extensive GIS expertise.

Industry:

Telecom

Region:

ANZ (Australia & New Zealand)

Benefits to the Client:

Accelerated Network Design

Improved operational efficiency

Higher Design Accuracy & Consistency

Enhanced Workforce Productivity

Business Challenges

Several operational challenges were limiting productivity and scalability:



Long project delivery cycles



Increased operational costs



Greater dependency on scarce specialists



Higher rates of design errors & rework



Reduced scalability as network deployment demand grows

Operational Complexities

Complex GIS interfaces required significant training and experience to use effectively.

Routine design activities depended heavily on a small group of senior specialists.

Inconsistent tool usage resulted in varied outputs, rework, and quality issues.

Manual navigation through multiple GIS tools slowed project execution.

Field survey updates were not consistently synchronized with inventory and operational support systems.

New team members faced a steep learning curve, delaying project contributions.

Technology Barriers

Limited automation

Complex tools requiring expert knowledge

Disconnected data pipelines

Technology Barriers

Poor system integration (OSS/S18)

Lack of standardized GIS workflows

Solution Strategy

The organization partnered with Techwave to implement an AI-driven conversational interface integrated with QGIS to simplify user interactions and standardize workflows.

The solution enabled users to perform design and data management activities through natural language commands rather than navigating complex menus and tools.

Business Challenge	Solution Approach
Complex GIS navigation	Natural language interaction with QGIS
Inconsistent workflows	Guided intent-based processes and standardized actions
Dependency on experts	Simplified execution accessible to users of varying skill levels
Manual updates and synchronization	Automated updates across related systems and deliverables
Slow onboarding	Reduced need for deep tool-specific training

The platform also automated updates across connected deliverables and inventory systems, ensuring data consistency while reducing manual intervention.

Business Outcomes

The organization achieved significant operational improvements:

Faster Project Execution

- 50% faster design processing across network planning activities
- Up to 2 hours saved per task through automation and simplified workflows

Higher Quality and Consistency

- Standardized workflows improved output consistency across projects
- Guided processes reduced user errors and rework

Improved Productivity

- 50% reduction in manual effort associated with routine GIS operations
- Reduced dependency on senior resources for day-to-day tasks

Workforce Enablement

- Faster onboarding and productivity for new team members
- Greater accessibility of GIS capabilities across the organization

Business Outcomes

Client Value Snapshot

Objective	Accelerate network design	Reduce operational effort	Improve workforce productivity	Standardize project execution	Reduce knowledge dependency	Scale operations
Business Value Delivered	50% faster design processing	50% reduction in manual work	2 hours saved per task	Standardize project execution	Less reliance on specialist resources	Easily extensible and adaptable workflows

By transforming GIS interactions into a conversational experience, the organization established a scalable foundation for future AI-driven network operations. The approach not only improved current project delivery but also positioned the business to accelerate future network expansion initiatives with greater efficiency, consistency, and agility.

Business Impact



Why Techwave?

Headquartered in Houston, Texas, Techwave is a global IT Services and Engineering firm driving transformation for the world's leading enterprises. We solve complex business challenges by applying technology with purpose—aligning strategy, cost, and execution to deliver measurable outcomes. Our capabilities span Cloud and Infrastructure Management Services, Digital Engineering, Telecom and Utilities Engineering, Data and AI, and Enterprise Applications including SAP, delivered across major industries to enable sustainable, business-led digital transformation.

The AI solutions built under Nalora is Techwave's vision for enabling AI at enterprise scale through aligned, intent-driven intelligence. It is the connective fabric that brings together intelligence, intent, governance, execution, and human oversight to operationalize AI responsibly across the enterprise.



Techwave is your gateway to transformative IT and engineering expertise since 2004. With roots in Houston, Texas, we lead global businesses on digital journeys. Our services include Enterprise Solutions, Product Engineering, RPA, Advanced Analytics, AI/ML, and IoT. With 3,000+ experts across 11 countries, we're committed to innovation.



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