esri Australia

A forward-thinking strategy for improving business operations

Learn how a global mining and metals company embedded a GIS strategy that supports data-driven decision-making across its Australian operations.

To drive greater operational efficiencies and support safety and sustainability practices, South32 has rolled out an innovative location strategy that enables the value of its geospatial technology to be fully exploited across its Australian operations.

Project Overview

With each operation previously utilising independent IT systems, South32 identified an opportunity to create a single, centralised data management platform that would enable accurate, current and consistent insights to be instantly shared across its business. South32 partnered with Esri Australia to assess its current GIS usage; and develop a strategic, best-practice approach to deploying an enterprise-wide GIS solution aimed at maximising ROI.

The industry-leading system successfully consolidates spatial information into one overarching platform. Acting as a 'single point of truth' for authoritative data, the solution incorporates a robust data management and governance framework to ensure all corporate information is collected and stored in a consistent and secure manner. This has improved operational efficiencies and reduced organisational risk by delivering one source of high quality information to decision makers at all levels.

With this approach, South32 has successfully embedded a robust geospatial framework for a better-connected business.

Client in focus

South32 is a global mining and metals company with operations in Australia, Southern Africa and South America where it mines and produces bauxite, alumina, aluminium, energy and metallurgical coal, manganese, nickel, silver, lead and zinc.

Headquartered in Perth, South32's five Australian operations are located in Western Australia, Tasmania, New South Wales, Queensland and the Northern Territory.

South32 has always used Geographic Information System (GIS) technology across its business units including: exploration; mine planning; land and property management; environmental management; asset and facility management; and, safety – however its GIS platforms had typically been managed independently at each operation.

As a result, establishing a modern geospatial technology strategy was identified as a key goal for the business.

The challenge

South32 requested Esri Australia deliver a robust data management approach and location-based analytics strategy to address operational challenges and to enhance the information required for decision-making across its business.

In addition to independent operational IT systems, a further challenge was the company's geographically dispersed staff and varying levels of technical capability.

South32 sought a solution to address these issues, as well as a broader strategy for identifying ongoing opportunities where the company could improve its geospatial operations.

Specifically, it required a strategy that would:

- Deliver a consistent, central geospatial platform for managing location-based data – enabling anyone in the business to access and benefit from accurate and current insights.
- Minimise data replication across the organisation, and improve data integrity issues such as currency, redundancy and discoverability along with addressing IT issues such a bandwidth constraints and inconsistent data storage.
- Improve communication networks between the regional offices.
- Provide governance for ensuring the effective ongoing management and utilisation of the software.
- Deliver value to the business immediately, as well as over the long-term – without disrupting business as usual activity during implementation.

> Significantly improved data management and integrity means our decisions are better informed, with GIS now entrenched in the business.
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> **David Wilson** Vice President Planning and Development, South32

We've brought together previously independent GIS systems at our Australian operations, providing key decision makers with access to a single source of meaningful business insight and capability

David Wilson Vice President Planning and Development, South32

The solution

South32 partnered with Esri Australia to create and execute a location-based analytics strategy.

As part of an Esri Enterprise Advantage Program (EAP) – which provided South32 with a full package of GIS technologies and value- add services – a team of consultants audited and assessed the business's current practices. Based on the audit, they delivered a tailored GIS roadmap, outlining recommendations for current and future initiatives that would support the goals of the business.

To ensure strong solution uptake and ongoing effectiveness, the EAP also included technical support, training, ongoing consultation support and advice to co-develop and implement the initiatives alongside South32.

Key elements of the solution include:

- **Enterprise-wide GIS access.** An internal GIS community was formed, drawing stakeholders from the business to ensure the successful administration and adoption of the technology. This eliminated any uncertainty around data integrity and quality control and helped address the issue of varying levels of GIS maturity and adoption.
- **Strong governance framework.** A framework was introduced that focused on establishing and maintaining high data integrity. This included training staff and implementing processes to support them, including establishing consistent workflows and streamlining processes to discover, upload or share data using web applications.
- **Greater system interoperability.** An audit was conducted to identify the ArcGIS product versions that were currently being used. A plan was then developed to ensure all technology was updated to the latest version and incorporated within work practices, written procedures and standards. This included assessing and enabling greater interoperability between ArcGIS and other systems including Vulcan, Surpac, Datamine, and Minescape.

The innovation

- **A three-year location strategy roadmap.** To ensure the company's geospatial systems continue to deliver value for years to come, South32 received a three- year strategic plan, including a spatial data governance framework to manage adoption and compliance. This ensures a unified and sustainable direction is maintained, while still being flexible and scalable to address future business challenges.
- **Access to insights and analysis on-the-fly.** Given the dispersed nature of mining operations, it was important for South32 employees to have fast access to spatial insights – regardless of whether they were working online in an office or offline in the field. The new solution features a number of field data collection applications to streamline field data capture and improve data accessibility. This has also introduced new efficiencies with environmental field surveys, including habitat tree mapping and rehabilitation monitoring site analysis.
- **Innovative new mining practices.** The Enterprise GIS is enabling South32 to explore innovative new ways of doing business. For example, monitoring terrain and revealing images at intricate ground-level detail, as well as dust, stream and noise monitoring and water quality assessments being undertaken at its operations.

The outcomes

- A central repository for all spatial data has been delivered, enabling everyone in the organisation to easily find, share, and analyse spatial data and insights.
- Daily workflows have been streamlined and optimised to boost productivity – for example, a weekly process of manually updating mining progress maps and sharing via PDF has been replaced by an ArcGIS Enterprise Portal map and application that is always up-to-date and available in real-time.
- Data can be captured in the field and instantly uploaded into the central system, enabling field crews to operate more efficiently and allowing anyone in the organisation to access real-time insights.
- A strong governance program has been established to improve and protect data management practices, eliminating data duplication and integrity issues.
- The project saw rapid installation and adoption of the ArcGIS platform across South32's Australian operations, which mitigated the risks and costs associated with typical software deployments and increased operational efficiencies.
- Consistent technology standards are being used across six office operations, ensuring staff can seamlessly move between sites and use the software, without the need for additional training or support.
- Cost savings and greater ROI have been delivered from consolidating unused software licences and providing streamlined access to software training, support and maintenance through the EAP.

GIS is a major part of everyday activity across key areas of our business, including engineering, sustainability and exploration activities.

David Wilson Vice President Planning and Development, South32

Solution mix

Esri Australia Enterprise Advantage Program (EAP), providing a suite of products and services including:

- Dedicated Technical Advisor
- Professional Services
- Training Services and e-Learning Product maintenance and support
- ArcGIS Enterprise
- ArcGIS Online

Contact Esri Australia

For information on how to apply GIS solutions in your business, connect with us via:

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