Empowering Remote Asset Management

with Reality Capture

CAPABILITY STATEMENT

airscope™

About us

1,140,930 m²
largest reality capture <2mm accuracy

19,982
Laser scans &
360 panospheres

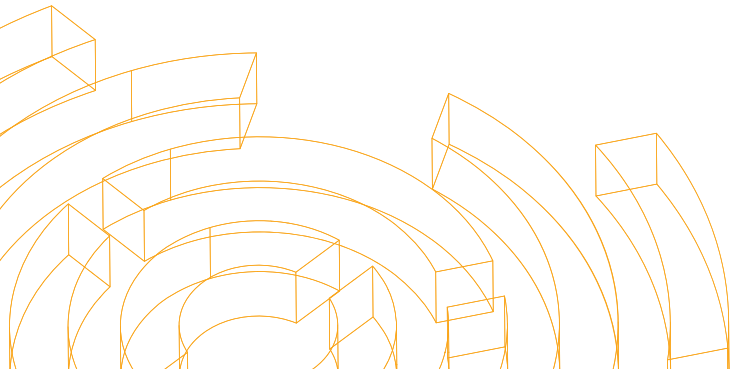
126,736
Aerial images captured

87TB
Total data
delivered

Airscope is a leader in asset digitisation. Since 2014, we have been a trusted partner in digitising over 70 full site engineering campaigns and more than 100 projects across industries such as oil and gas, mining, utilities, and many more.

Headquartered in Perth, Australia, with offices in Melbourne, Port Moresby, and Houston, we offer end-to-end or flexible project-specific solutions, supported by a highly qualified, multi-disciplined field team and APAC partners.

Airscope specialises in transforming large-scale captures of assets into precise and accurate 3D digital models to optimise asset management strategies and drive operational efficiencies. We enable our clients to tackle complex challenges through virtual access of real-world environments.



The Airscope Difference

Imagine the power of remotely visualising and managing your assets with secure, unlimited access to their real-world state. Gain unparalleled insights into potential issues and impacts before making any decisions or mobilising resources to site.

Remote Asset Visualisation: Secure, remote access to detailed, real-world visualisations of your assets, allowing for informed decision-making and risk assessment before deploying resources.

Expertise and Experience: With over ten years of experience across the Asia Pacific Region, we excel in capturing and processing complex datasets to generate large-scale reality capture models.

End-to-End Solutions: Robust workflows enhance collaboration and reduce risks, costs, and safety issues by providing high-definition digital representations of the ‘as-built’ environment.

High-Precision Digital Twins: Using aerial and terrestrial technologies, we create scalable and photorealistic digital twins with engineering-grade accuracy, serving as a central hub for asset intelligence.

Versatility and Value: We offer critical advantages across all project phases, from unmanned facilities to offshore operations and decommissioning, enhancing safety, reducing costs, and improving operational confidence.

Market leaders

We are committed to the continuous improvement of technologies and expanding the applications of our solutions to meet evolving industry needs.

By staying at the forefront of advancements in reality capture, digital twins, and remote visualisation, we ensure our offerings remain innovative, scalable, and adaptable.

By actively refining our tools to enhance accuracy and increase efficiency, we provide greater value to clients and discover even more use cases for this innovative technology.

> *We saved so much in just reduced helicopter flights from contractors having to scope the task and make simple measurements.*
>
> **Peter Roche, Gippsland Operations, ExxonMobil**

Industries We Serve

- Oil & Gas
- Mining
- Utilities
- Industrial
- Commercial

Proven Use Cases

- ✓ As-Built Verification
- ✓ Expedited Work Pack Development
- ✓ Shutdown / Turnaround Planning
- ✓ Back Modelling
- ✓ Scaffold Estimation / Design
- ✓ Onboarding, Inductions & Familiarisation
- ✓ Management Of Change
- ✓ Global Collaboration
- ✓ P&ID Walkdowns
- ✓ Documentation Repository & Control
- ✓ CMMS / EDMS Integration
- ✓ EPCM Support
- ✓ Multi-Layer Portal
- ✓ General / Close Visual Inspection
- ✓ SIMOPS Coordination
- ✓ Asset Tagging And Locating
- ✓ Point Cloud Extraction
- ✓ Corrosion Detection

What we do

We provide secure, unlimited access to your assets through 3D reality models, allowing remote visualisation. Our 3-step approach to reality capture solutions enables valuable data-driven insights to support strategic decision-making, before deploying resources to site.

CAPTURE

Our field teams conduct large-scale data capture campaigns using structured workflows and in-field quality checks. We employ 3D laser scanning and aerial photogrammetry to efficiently collect large volumes of data, ensuring fast processing and accurate creation of digital twins.

PROCESSING

Our local teams process data, managing photogrammetry alignment, laser scan registration, and precision clash detection. Each step is carefully handled to ensure the creation of accurate and reliable digital twins, refined for seamless integration into your project.

PUBLISH

Our scalable, secure, and browser-based platform provides an interactive 3D model of your site or asset. This SaaS visualisation engine enables real-time interaction, deeper insights, and remote access to your assets from anywhere.

THE OUTCOME

A spatially-accurate digital model representation of your asset that enhances efficiency across disciplines, streamlining workflows and optimising site-wide management.

airscope™

Enhancing Safety and Operational Efficiency with Advanced Aerial Data Capture

Team Airscope deploying a drone for the remote General Visual Inspection (GVI) of an offshore FPSO flare burn and tip.

Capture

Where vast amounts of data are captured, collected, and processed to create high-quality digital twins.

Our multi-disciplined field teams expertly plan and execute large-scale capture campaigns using proven workflows. By integrating advanced aerial and terrestrial technologies, we deliver precise and detailed reality captures, ensuring fast data processing and creation of engineering-grade digital twins for enhanced operational insight.

We provide three distinct levels of capture detail, tailored to accommodate diverse project requirements.

1

Engineering Point Cloud

Dimensionally accurate, engineering-grade, and geo-located point cloud data set from 3D laser scanning (accuracies of 1-1.9mm and < 2.5mm resolution) that serves as a baseline asset model. Ideal for design, fabrication, construction, and back-modelling to LOD 300 standards.

2

Digital Twin Lite

Gain additional context by integrating point cloud data with aerial photogrammetry (1.8mm GSD), to create an accurate, cost-effective digital twin. Ideal for engineering design, general visual inspection, decommissioning, and project planning.

3

Digital Twin HD

Upgrade to high-definition terrestrial photogrammetry (1mm GSD), for a detailed, photo-realistic digital model. Ideal for work pack development, shutdown simulation, close visual, inspection (CVI/CGI), asset tagging, and projects requiring high detail and accuracy.

Context

We utilise various capture techniques to meet diverse project requirements and budgets, from high-definition terrestrial photogrammetry for detailed inspections to aerial photogrammetry for large-scale data collection. These tailored solutions ensure the best balance of precision and cost for each client.

> *The precise and comprehensive data delivered by Airscope using mobile laser scanning techniques empowers us to make informed decisions, mitigate risks, and elevate our asset management to unprecedented heights.*
>
> **Clayton Percy, Engineering IM Team Leader, Santos**

Terrestrial Laser Scanning
Provides fast and highly precise 3D laser measurements and models combining multiple high-resolution scans with high resolution 360° images to ensure comprehensive asset coverage.

Mobile Laser Scanning
Offers rapid, accurate, and cost-effective alternative to traditional methods, with semi automatic noise and artifact removal for large and complex environments.

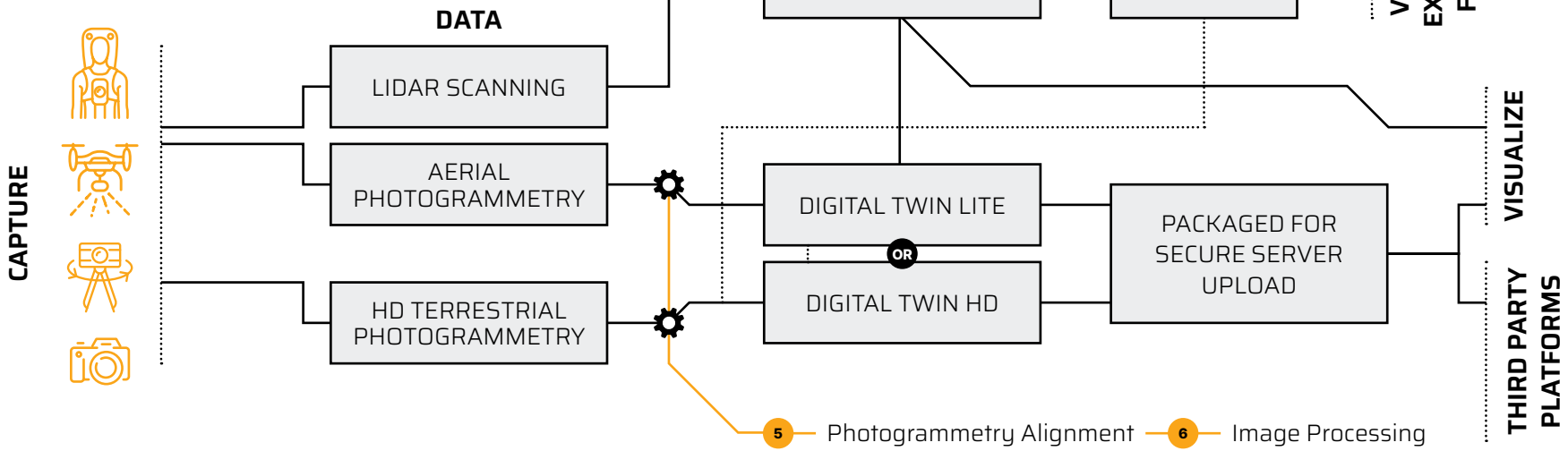
Terrestrial Photogrammetry
Provides detailed spatial information about physical assets and environments by recording, measuring, and interpreting high-resolution images, for accurate and detailed textured models.

Aerial Photogrammetry
Offers rapid, precise, and safe method of data collection for large or high-risk areas, delivering accurate and detailed models, eliminating the need for on-site presence or ground level inspections.

Processing

Where raw data is transformed, refined, cleaned, and quality-checked to replicate accurate digital twins.

Our in-house team carefully manages every step, from aligning photogrammetry and laser scanning data to performing registration and back-modelling. We also conduct clash detection and updates to ensure data is consistent and precise. By processing and refining large datasets, we create seamless digital representations, preparing it for the final visualisation. This ensures reliable outputs for informed decision-making and analysis.



Digital Difference

Point Registration
Aligns data points from different scans to build an accurate, unified 3D model, supporting updates and modifications.

Clash Detection
Identifies conflicts within the model early to prevent design or structural issues.

Model Optimisation
Simplifies the model while maintaining accuracy, enhancing performance and integration of future updates.

Photogrammetry Alignment
Merges images to create cohesive and accurate 3D representations of large assets.

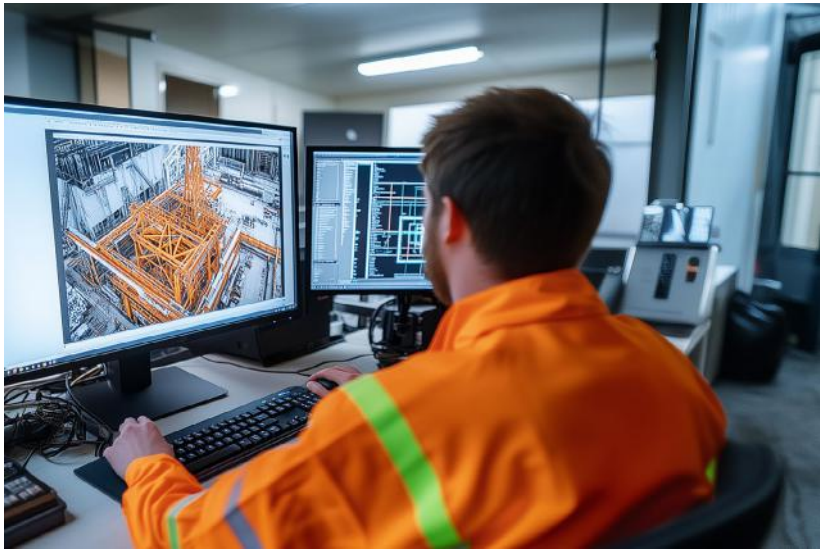
Image Processing
Refines imagery for clarity and detail, improving the precision of the 3D model.

Artifact Elimination
Removes distortions and noise to ensure model accuracy and reliability.

Certified by ISO27001 Information Security Management Systems

This recognition validates our capability to provide the highest levels of security and confidentiality in handling data sovereignty options. Our servers have successfully passed penetration testing by industry leaders Chevron and ExxonMobil, further demonstrating our commitment to data protection.

Our commitment to excellence and disciplined approach, combined with advanced technologies and methodologies, ensures delivery of high-quality digital twins, providing clients with actionable insights for informed decision-making and successful project outcomes.



Publish

Where raw data is turned into actionable insights integrating Capture and Processing into high-quality visualisations accessible via our intuitive software, Airscope Visualize or other third party platforms.

Airscope Visualize

Gain comprehensive visibility across your assets

Airscope Visualize is an intuitive 3D visualisation platform that transforms how businesses manage and interact with their assets. This proprietary SaaS solution simplifies operational complexities and offers remote access, enhancing project management, asset monitoring, and maintenance across various industries.

Engineered for comprehensive visualisation, seamless collaboration, and ISO 27001-certified data storage and processing, this brower-based solution delivers improved efficiency, productivity, safety, and cost-savings.

Key Features

Browser-Based Platform
Easily access digital models without the need for local installations, software, hardware or other IT infrastructure.

Secure and Scalable
Robust security measures designed to provide role-based access and scale based on demand.

Central Data Repository
Consolidate all datasets and documentation into a secure single source of truth location, ensuring standardised formats across teams.

Real-Time Collaboration
Enable engagement via updates and concurrent viewing for seamless user interaction and better project management.

Seamless Integration
Easily integrate with existing CMMS, ERP, EDMS, or other enterprise solutions via 3rd Party APIs or hyperlinks.

Benefits

Airscope Visualize offers a range of powerful benefits that enable smarter, safer and more sustainable remote asset management.

Enhance Performance and Efficiency
Provide quick access to engineering grade data-rich models for faster decision-making and reduced project timelines

Enable Remote Site Management
Access, monitor, and control sites anytime, anywhere with high-quality, interactive 3D asset models

Streamline Operations and Tasks
Digitise simple and repetitive tasks and enable simulations to enhance workflow methodologies and demand planning

Improve Safety
Reduce on-site visits to minimise risks associated with high-risk sites and harsh environments

Enable Proactive Maintenance
Detailed visual insights provide early detection of issues to reduce downtime and prolong asset life

Reduce Manpower and Operational Costs
Lower manpower hours spent on site visits and inspections

Boost Collaboration and Data Sharing
Reduce process complexity of enabling multi-stakeholder/sub-contractor access for tailored needs

Improve User Experience
Eliminate data silos by seamlessly integration with other workflow enterprise systems and third-party data sets

Shaping the Future of Sustainable Decommissioning

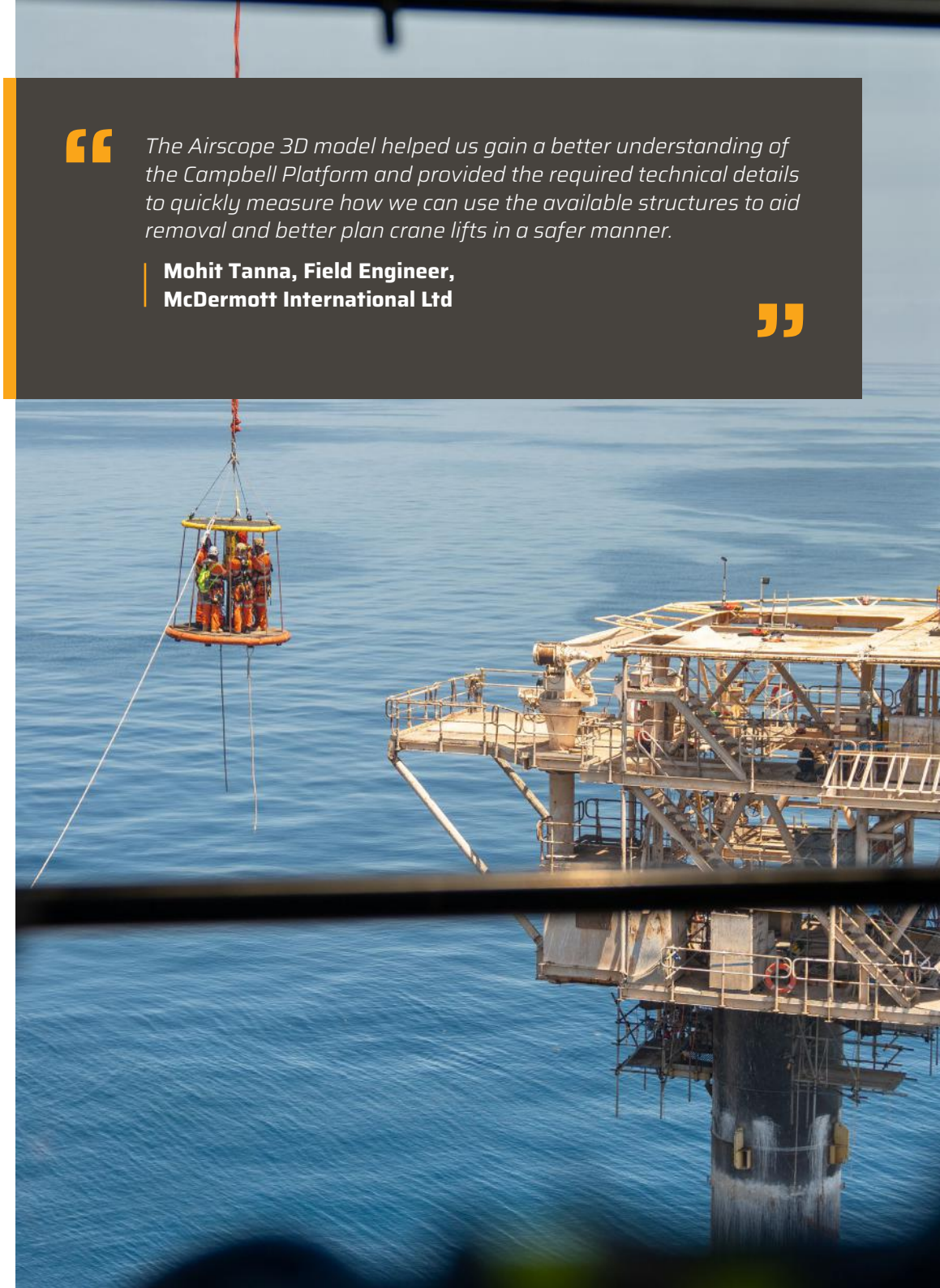
The offshore oil and gas industry is facing a substantial decommissioning challenge over the next decade, with projects in Australia alone estimated to cost USD 40.5 billion. This challenge presents an opportunity to leverage emerging technology and innovation to improve decommissioning outcomes, including planning, engagement, removal, and disposal processes.

Airscope's Reality Capture technology is revolutionising remote offshore operations, enhancing both efficiency and safety. Our integrated approach supports sustainable decommissioning activities by streamlining operations, reducing risks, and optimising resource allocation across the offshore asset lifecycle.

Transforming Decommissioning through Collaboration

Our strategic partnership with the **Centre of Decommissioning Australia (CODA)** underscores our commitment to developing a world-class decommissioning industry. As a CODA partner, we reduce personnel on-board, lower mobilisation costs, and minimise project unknowns through advanced reality capture technology for safer, more efficient decommissioning. Together, we're setting new benchmarks for safety, economic efficiency, and environmental responsibility, ensuring sustainable practices that make a positive impact both locally and globally.

> *"The Airscope 3D model helped us gain a better understanding of the Campbell Platform and provided the required technical details to quickly measure how we can use the available structures to aid removal and better plan crane lifts in a safer manner."*
>
> **Mohit Tanna, Field Engineer, McDermott International Ltd**



Enhancing remote asset inspection and detailed analysis from any location

Engineer reviewing a high-resolution model of an onshore facility using **Airscope Visualize**.

Success Stories

With a proven track record across multiple industries, our cutting-edge technology has been instrumental in delivering comprehensive solutions for asset management, planning, and safety improvements.

> *We engaged Airscope to deliver functional 3D models of our facilities in Bass Strait. These models are being used to develop and plan work programs for the maintenance of our platforms, to plug and abandon wells and for longer-term decommissioning.*
>
> **Simon Kemp, Decommissioning Asset Manager, Bass Strait at ExxonMobil Australia**

Project 1:
Bass Strait Decommissioning

Challenge: Esso lacked asset information and documentation for stakeholders and subcontractors which led to outdated decommissioning methodologies and unknown risks.

Solution: Airscope captured 18 assets in the Bass Strait, allowing the team to remotely plan their decommissioning process with a pool of selected vendors. The digital twins enabled safe, remote access for planning around high-risk areas without endangering personnel.

Results: Reduced helicopter mobilisations by 28, cut vessel time by 3 days, and achieved safe, on-schedule decommissioning despite the pandemic, conserving resources and significantly improving operational efficiency.

Project 2:
CPF Ichthys Explorer

Challenge: INPEX needed to reduce site visitations, safely access restricted areas, cut on-site contractors, and enhance maintenance and planning while ensuring accuracy and quality.

Solution: Airscope developed an engineering-grade Digital Twin Lite model of the Ichthys Explorer platform, hosted on Visualize. This allowed remote access for maintenance and planning, integrating with IoT sensors for efficient data linkage.

Results: Enhanced safety for restricted areas, significant time and cost savings, and optimised scheduling for simultaneous operations (SIMOPS).

Project 3:
PNG LNG Plant Optimisation

Challenge: PNG LNG required two distinct work packages. Phase one to support Pre-FEED project with two incumbent firms while phase two focused on process improvement and enabling proactive maintenance for infill operations to ensure business continuity.

Solution: Airscope delivered a highly precise engineering-grade 3D model of the vast site in a timely manner. The ambitious field capture was successfully completed in five swings, utilising 8 laser scanners, while ensuring data management adhered to stringent ISO 27001 security protocols.

Results: Improved workflow, reduced operational costs, minimised uncertainty in design and planning, and enabled remote inspections and maintenance for efficient site management.

Accreditations

Health, Safety, Environment, and Quality

Airscope is committed to the highest standards of quality, safety, and environmental care, prioritising value for all stakeholders through ethical business practices and adherence to industry guidelines. We proudly hold the following key certifications:

- ISO 9001:2015 (Quality)
- ISO 14001:2015 (Environment)
- ISO 27001:2013 (Information Security)
- ISO 45001:2018 (Occupational Health & Safety)

These certifications ensure your projects are managed to deliver quality outcomes, secure data management, and full compliance with safety and environmental standards.

CERTIFIED
ISO 9001
ISO 14001
ISO 45001
ISO/IEC 27001
BUREAU VERITAS

UAV Operations

Our CASA-certified fleet of commercial drones operate under strict aviation regulations. We hold an RPA Operator's Certificate (ReOC 0193), and all our pilots have Remote Pilot Licences (RePL), so every project is managed with the highest level of expertise.

AUSTRALIAN CIVIL AVIATION SAFETY AUTHORITY
CASA

Enabling remote asset inspection for enhanced safety and maintenance planning

Photo-realistic aerial data capture for a 3D digital twin of a complex facility.

airscope™

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