



Santos

CASE STUDY

Creating Decommissioning Work Packs for Santos HJV Unmanned Platforms

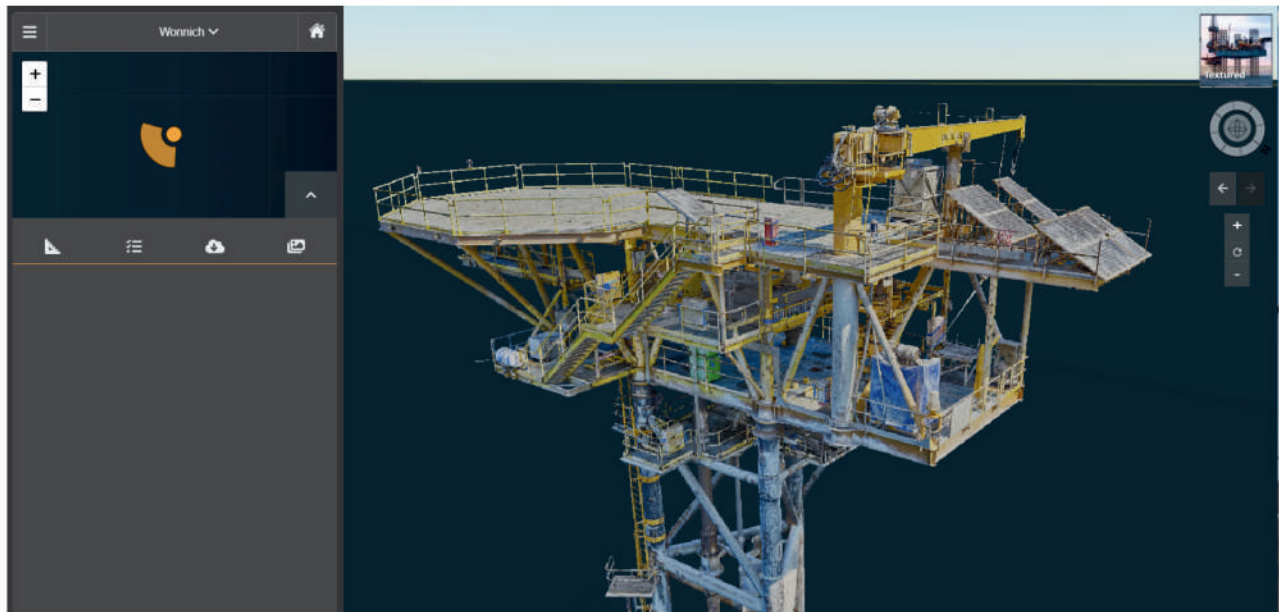


Objectives

Santos encountered significant challenges in effectively planning for the decommissioning and development of work packages for their offshore platforms. This difficulty arose from the inherent inaccessibility of these platforms, requiring rope access for safety compliance. The primary challenge was to depart from conventional practices that relied on 'rope access' technicians for platform remediation, thus ensuring accessibility for other personnel. To address this issue and optimize their operational procedures, Santos established a strategic partnership with Airscope to revamp their processes.

Solution

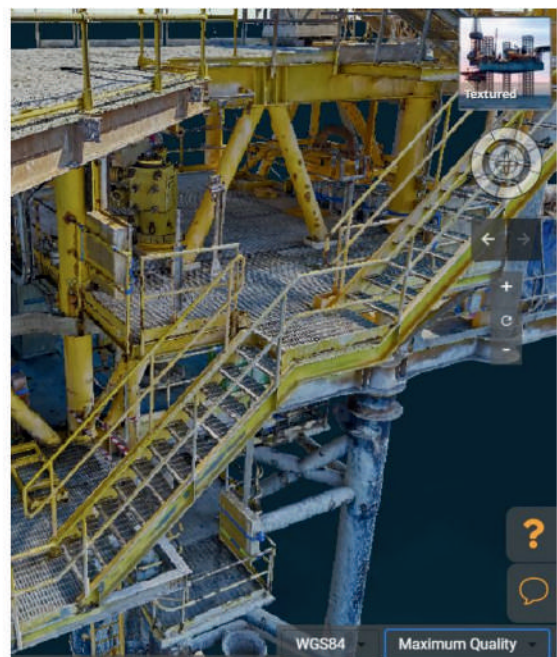
Airscope did an aerial capture of the platforms with drone imagery only that would give stakeholders the overview they require for visual inspections and workpack planning saving Santos costs and time involving paperwork and extensive processes.





Implementation

The Airscope team implemented an intricate methodology for platform capture, entirely eliminating the need for personnel to physically access the platforms due to their hazardous conditions. This approach involved deploying a drone from a support vessel. This meticulous capture process resulted in the creation of photo-realistic digital twins, which were crucial in conducting condition reports. The outcome was the provision of precise, and photo-realistic digital replicas, offering Santos a valuable digital asset for their operational needs.



Benefits

- Santos improved operational efficiency by leveraging these digital replicas to create decommissioning work packs. This approach allows engineers in Europe and the UK can ensure the platforms' safety without putting personnel at risk on-site.
- The regular examination of these digital models on a weekly basis by engineers demonstrates a commitment to ongoing monitoring and evaluation. This proactive approach enables timely adjustments and ensures that any potential issues are promptly identified and addressed.
- By planning to remove the platforms without the need for physical access until the final stage of decommissioning, Santos is likely to achieve significant cost savings. This approach minimizes the expenditure associated with sending 'rope access' teams and streamlines the process.



CASE STUDY

Inpex CPF Redefines Work Pack Creation and Safety with Ichthys Platform

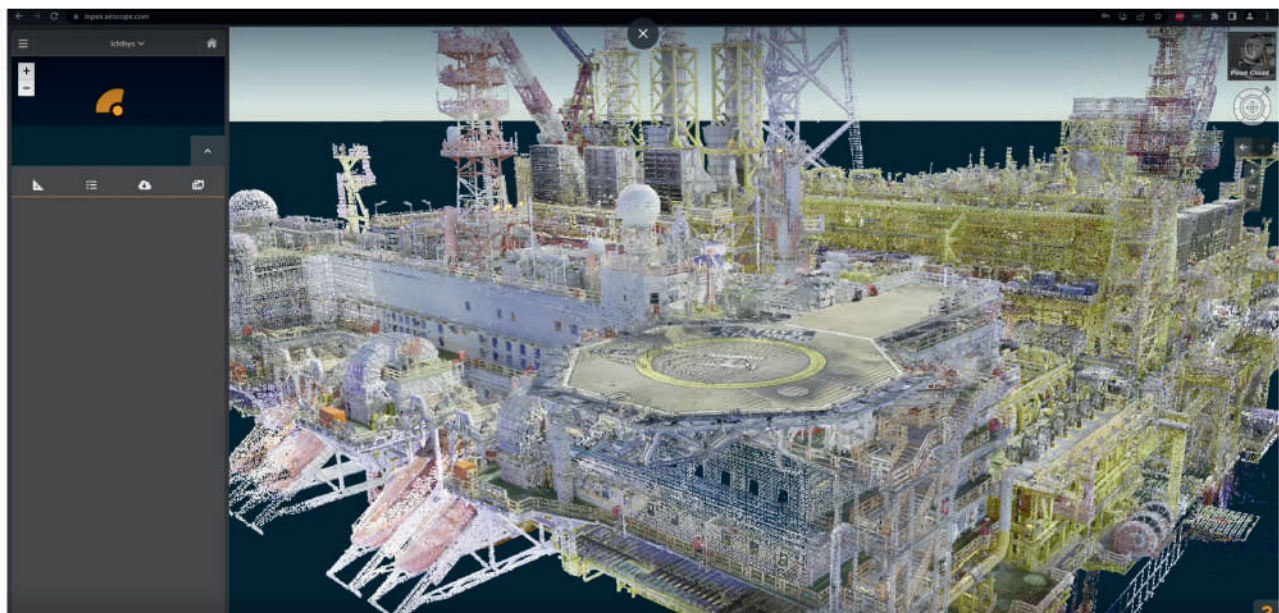


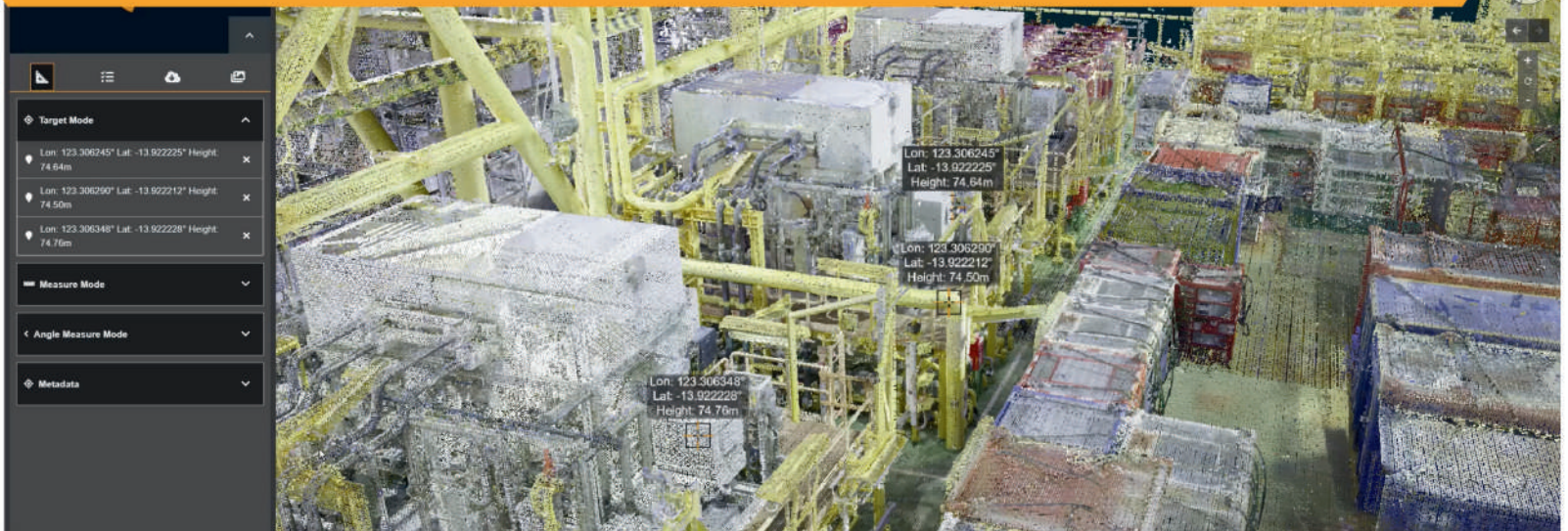
Objectives

Inpex aimed to transform its workplace processes for the Ichthys platform on how they operate and expedite their work pack creations. Inpex wanted to cut down on site visitations, safely access restricted areas and improve their maintenance and planning operations. The objective was to streamline their current operations and successfully allow remote site inspections and expedite work pack developments without compromising accuracy and quality.

Solution

To assist Inpex with improving efficiency, Airscope produced an engineering grade reality capture, Digital Lite, that would provide a digital replica for Inpex's contractors and team. This provided remote access for maintenance and global planning without site visitations. The Digital Lite model of Ichthys platform was hosted on Visualize, Airscope's in-house software, to access the model easily and help link the tracked IoT sensors.





Implementation

The Airscope team did an extensive two-part capture of up to 1548 hours of work. They initiated the process with laser scanners and drones capturing 6947 laser scans and 16680 drone images for a highly detailed and accurate capture of the platform.

The model was then shared through Visualize, a collaborative visualization tool versatile for collaboration with stakeholders, management of changes, and project delivery planning. Through the combination of drone technology, laser scanning, data gathering, and collaborative efforts, the Airscope team's implementation stands as a testament to enhancing work processes for the Ichthys platform.

Benefits

- By embracing Airscope's innovation, Inpex elevated its safety especially for restricted on-site areas like flare tips for inspections.
- The combination of detailed capture for remote inspections and integration of the model into existing systems equates to substantial time and cost savings for Inpex.
- Scheduling SIMOPS (simultaneous operations) is optimized by considering the number of tags present in a particular area of the Inpex platform. Such measures are necessary to ensure that turnarounds are both safe and accelerated.



CASE STUDY

Delivering an enhanced decommissioning framework of Whiting Platform.



Objectives

ExxonMobil's team faced the challenge of remotely planning cuts and lift locations for a platform that had been idle for many years. The team had no physical access to the platform, limited documentation, no up-to-date modelling or knowledge of the asset. Additionally, specialist equipment was required from Norway and there were concerns about the safety of the platform's helipad. The objective was to overcome these challenges, collaborate with global teams and successfully determine the cuts and lift locations to obtain access.

Solution

Airscope undertook a two part capture which would assess key risks and give planning teams the overview they required. This is followed by an engineering grade capture for key components to minimise time on site to enable global collaboration. Data was then deployed to a SaaS platform to leverage key expertise in other regions.





Implementation

The team executed a comprehensive approach to ensure a safe work environment and helicopter landing safety for offshore platforms. They initiated the process by deploying a drone from a support vessel, which generated a visual model of the platform and helideck, enabling precise assessment of risk factors including pressure gauges and helideck support structure.

With these insights, the team devised a strategy to mitigate identified risks, ensuring skilled personnel were briefed to address potential hazards during platform boarding. The team combined internal data capture with an intensive day-long scanning operation once the platform had been made safe by the rope access team.

This work yielded an accurate engineering-grade model of the well bay. This well bay model was then shared through Airscope Visualize with the Norwegian team, enhancing joint decision-making regarding safety measures. Using reality capture technology, and a collaborative focused environment, Airscope improved efficiency and safety for the helicopter landing.

Benefits

- Through effective planning, 28 helicopter mobilizations were spared during the initial planning stages.
- The time required for vessel operations was reduced by 3 days. Reduction in vessel time operations led to improved project timelines.
- Despite the challenges posed by the pandemic, the decommissioning process was carried out safely and adhered to the established schedule. This achievement is a testament to the robust planning and execution strategies implemented.



Santos

CASE STUDY

Decommissioning: Elevating Offshore Safety with Santos Assets

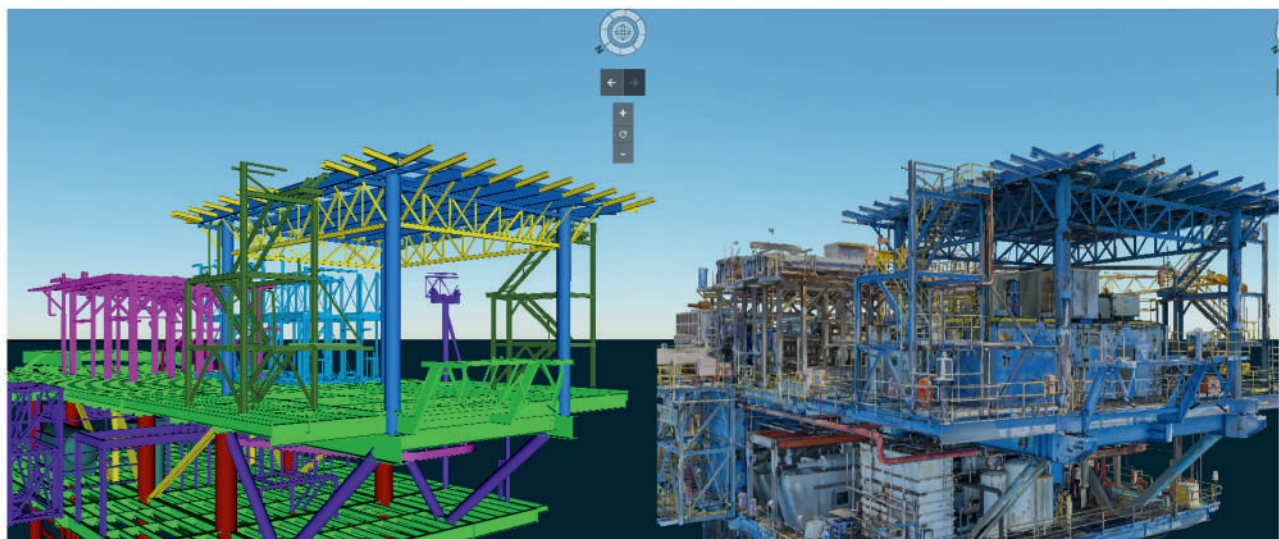


Objectives

Santos, a key industry player, aimed to transform their evaluations of offshore assets through digitisation. They partnered with Airscope to redefine safety protocols for their assets to achieve remote evaluation for their team. Airscope ensured our innovative reality capture technology helped achieve seamless safety assessments, elevated by efficiency and global expertise.

Solution

Airscope's pioneering approach redefines offshore safety assessments in a two-step capture methodology: a comprehensive overview for risk identification and high-level planning, followed by a highly detailed digital twin model for in-depth risk assessment. This blueprint seamlessly integrated an engineering-grade capture of key components, optimised for remote evaluation which helped Santos gain insights from the digital models without having to go down on-site.





Implementation

Envisioned by reality capture experts, the implementation combines reality capture with high resolution photo model of the assets. This model was integrated into Visualize, an advanced Software as a Service (SaaS). The highly accurate digital twin empowered Santos' engineering team to virtually inspect structures, using UAV-captured images. The model's immersive capabilities surpassed traditional evaluations, facilitating navigation through obscured sections.

Upon completion of the preliminary assessment, Santos charted a robust safety strategy, integrating flooring and scaffolding solutions to ensure a secure environment. Airscope's domain specialists were subsequently granted access to conduct precise laser scanning, refining remediation planning.

Benefits

- By embracing Airscope's innovation, Santos elevated safety evaluation standards, and successfully safeguarded their assets while setting a precedent for industry peers.
- Through Airscope's Visualize, Santos redefined remote inspections drawing on data and insights from its digital model allowing quick decision-making across the team.
- The combination of preliminary overviews and detailed remote assessments optimised on-site efficiency, equating to substantial time and cost savings.



CASE STUDY

Optimising Asset Longevity: ExxonMobil's Bass Strait Operational Team's Strategy



Objectives

ExxonMobil's (Esso) Bass Strait operational team faced the challenge of extending the life of near end-of-life assets in the most effective way. They also needed to commence planning for the decommissioning of several assets. As these assets have been in operation for many years, the digital design documents were unavailable, and only several blueprints remained in the archives which did not provide a holistic or accurate view of the asset.

Solution

Airscope used terrestrial laser scanners and aerial photogrammetry to capture the Bass Strait portfolio, generating a full 3D model. They then processed the associated point cloud to create the required pipe work in CAD.





Implementation

Esso engaged Airscope for a two-phase Bass Strait portfolio capture. For production assets, they utilised Digital Twin High Definition, employing terrestrial laser scanning, photogrammetry, and aerial photogrammetry. End-of-life assets designated for decommissioning were captured as Digital Twin Lite, with both methods achieving engineering-grade accuracy ($\leq 2.5\text{mm}$).

The processed point cloud data was processed by our partner company, MechWest, to create Computer-Aided Design (CAD) models which are accessible via Airscope's Visualize. To streamline decommissioning planning, P&IDs were tagged to each spool, facilitating efficient planning for all platform circuits. After ensuring circuit safety, engineers calculated the centre of gravity for each spool, aiding cut and lift planning and execution

Benefits

- The 3D reality capture model reduced the need for physical site visits, allowing engineering teams to plan and analyse scenarios confidently with current data, saving costs.
- Clear circuit mapping simplified activities like flushing, isolation, depressurisation, and cutting. This reduced reliance on local knowledge and improved safety by using current data instead of outdated 1980s drawings.
- Integrating reality capture with the Navisworks model sped up planning, involving experts from various fields to develop efficient decommissioning plans.



CASE STUDY

Enhancing Operational Efficiency: Esso's Longford GP2 Work Pack Development Strategy

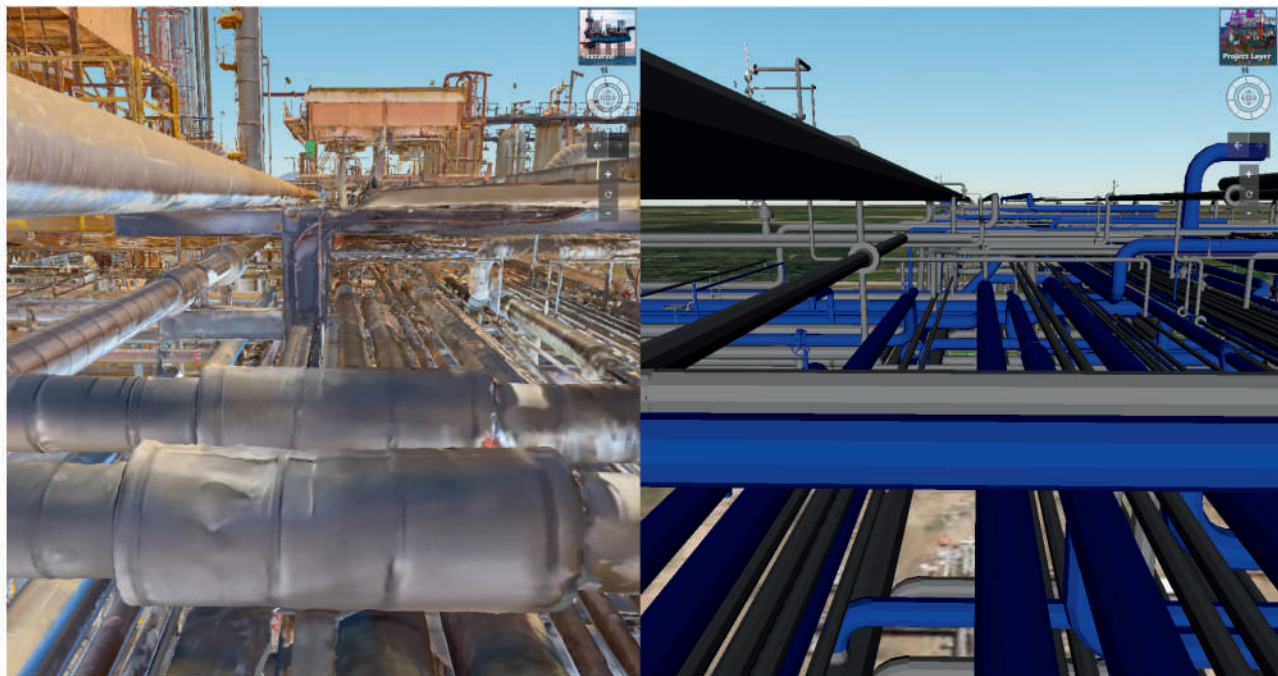


Objectives

Esso's team at Longford Gas Plant 2 (GP2) needs to identify operational maintenance issues and track them for systematic resolution. This approach involves aggregating similar processes into work packs, enabling simultaneous and effective operations. These work packs are then issued to service providers, allowing them to compete for the assigned tasks.

Solution

Airscope Visualize has the Management of Change (MoC) panel which allows employees to access the GP2 model to update and identify issues by tagging the equipment in question and attaching the actions required and the support documentation and instructions.





Implementation

Esso Longford GP2 model, available through Airscope's Visualize SaaS product, enables the team to tag equipment and structures of concern. In the Management of Change (MoC) panel, there are three tag types: Green (Complete), Amber (In Progress), and Red (Planned). When an issue arises, the Red tag is selected, and the user spatially identifies the object. They are then presented with a series of questions about the object and can attach multiple documents to provide the solution provider with sufficient information for remedial action.

As the number of activities increases, the scheduler, planners, and engineering teams review the tasks. These tasks are grouped based on similarities or area, zone etc. within GP2, ultimately forming work packs.

These work packs are then made available to service providers who can access the GP2 plant model. This allows them to plan and provide quotes for the work pack without the need for an on-site inspection.

Benefits

- Using Airscope's digital twin allows Esso's service providers to access the site remotely with high-definition photography reducing the need for site inductions, permit applications and travel to site for service providers.
- Airscope's Visualize enhances precision, reducing variations and fostering flexibility for service providers.
- Detailed scheduling of operations becomes more precise as the number of tags in specific plant areas is visible. This allows schedulers, planners, and operators to manage activity levels and schedule SIMOPS for a safe and efficient turnaround.