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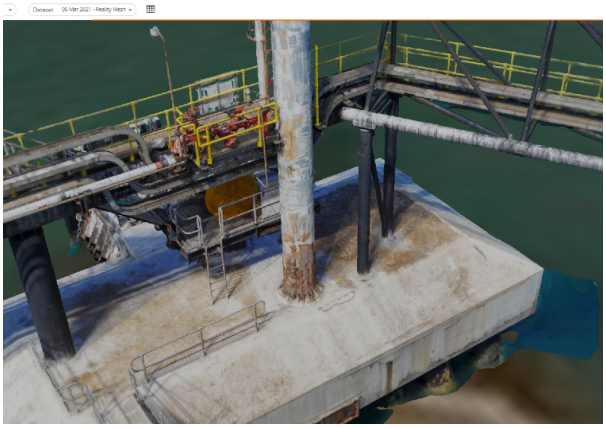
Reality Capture: Turning Data into Information

Reality capture refers to the process of scanning an asset or site in the field and then converting the scan data into digital 3D models that are useful for design, planning and execution of construction, remedial and integrity activities.

Applus+ has the capability to capture, process and host 3D reality models. The Australian Applus+ 3D Technology Centre, one of three around the world, is focused on research and development of new inspection technologies, as well as innovative access solutions and 3D services.

Applus+ is a global leader in Digitalisation, UAV, NDT, and Inspection services, working within capital-intensive high-risk industries. Applus+ meets customer needs with a wide range of advanced technologies and tailor-made solutions.



THE Applus+ SOLUTION

The Australian Applus+ Digitalisation Department is the centre of excellence for 3D services within the Applus+ global network. We excel at:

- Research and development
- Provision of bespoke technologies
- Providing solutions to complex problems
- Identifying, procuring, and validating new inspection techniques from around the world
- Aligning with global industry approaches to inspection through groups such as HOIS and Sprint Robotics

- Identifying new techniques for access such as robotic crawlers, unmanned aerial vehicles and vacuum crawlers
- Ongoing review, development, and validation of remote visual technologies
- Subsea inspection solutions – the Perth technology centre is the global leader for subsea inspection for Applus+
- Provision of maintenance and engineering support, onshore and offshore, as required

Applus+ utilise a dedicated fleet of Unmnanned Aerial Systems (UAS) and camera systems to capture an asset or site to develop into a 3D model. As a certified CASA (Civil Aviation Safety Authority) Company, we employ pilots who are experienced and capable of flying in high-risk environments such as confined spaces, bridge culverts and gas plants. A dedicated team is also employed for post-processing point clouds for each model.

Our end-to-end solution allows engineers and industry experts to complete condition assessments on 3D models. Post reporting, we utilise field inspectors, engineers and/or technicians to further investigate areas of concern highlighted through assessment of the 3D model. Our engineers then provide final engineering reports complete with defect summaries, recommendations for repair and life expectancy. Applus+ can further assist in tendering development, bill of quantities, access to 3D models for third parties and QAQC monitoring/vendor surveillance through construction or remediation activities.

The Applus+ Real Estate Capture module also offers conversion to a BIM model or integration directly into an existing BIM model. In this way, CAD outputs can be produced and the accuracy of the design can be verified.

The creation of a 'Digital Twin' (Reality Capture) allows for digital simulations to be undertaken to:

- Reduce project costs
- Reduce site visits
- Improve project efficiencies by making decisions based on real world data, rather than assumptions
- Provide quick analysis of existing as-built conditions
- Aid construction by continuously monitoring progress of the physical asset against the intended design
- Increase the speed of project completion by eliminating errors
- Improve communication and understanding throughout the project
- Share progress and collaborate

Target customers

Infrastructure Projects can benefit from Reality Capture for:

- Capturing large areas quickly and understand existing site conditions
- Providing terrain models and quantifying works
- Validation and detection of existing infrastructure/services

The following projects can benefit from Reality Capture:

- Roads, Bridges and culvert, monitoring, inspection, and construction
- Rail and Tunnel construction
- Solar and Wind Farm Feasibility Studies
- Design and Architecture of existing assets (reverse engineering)
- Water Infrastructure

Key customer benefits

- Reduced site visits
- Remote working
- Increased accuracy and validation
- Identification of challenges early in the project
- Collaboration and communication efficiencies
- Monitoring and quantifying construction works
- Structural Monitoring