



Vekta Captures Vast Australian Project with A3 Digital Mapping System

Vekta is a leading Australian land, engineering and aerial survey provider, providing spatial and surveying solutions to major national and international projects, consulting to a broad range of industries including property development, construction, mining, infrastructure and various levels of government.



For over 60 years Vekta has undertaken many major projects, both in Australia and overseas. Vekta has worked in over 20 countries including assignments in the Middle East, South East Asia and throughout the Pacific.

The Challenge

Vekta was required to capture and supply 10cm GSD RGB imagery with a spatial accuracy of $\pm 0.25\text{m}$ RMSE, of the entire metropolitan and surrounding areas of the cities Sydney, Newcastle and Wollongong, covering an area of approximately 14000 km². The area extended far enough west to include the rugged ranges of the Blue Mountains.

The project was coordinated by the Land and Property Information group of the NSW Government to meet the aerial imagery needs of a range of government stakeholders. The project is the largest high resolution imagery project undertaken over the Sydney metropolitan area to date.

A significant challenge facing Vekta was that the majority of the project area falls within the controlled airspace of Kingsford Smith Airport, one of the busiest in Australia. Some Australian airspace restricts access to lower altitudes for prolonged capture, so the chosen camera would need to operate at high altitudes. In addition, the imagery needed to be captured with a minimum solar angle of 50 degrees to minimize shadow effects, but also to have minimal solar flare reflections from water bodies.

For such a large project, Vekta required a system that offered extremely efficient aerial capture, as well as highly automated image processing. The aircrafts to be flown were the Cessna 402B twin engine and Cessna 206 single engine aircraft.





The Solution

Vekta chose VisionMap's A3 Digital Mapping System to meet the challenge. According to Vekta, "The A3 Camera was the most suitable large format digital aerial survey camera to undertake such a project." From previous experience with the System, Vekta knew that A3 would be able to capture such a large project area under the time restrictions imposed by the solar angles.

The A3 Camera's ability to operate at a high altitude of 10,000 feet made it easier to undertake the project in the busy Sydney airspace, in which it's normally difficult for aerial survey companies to operate.

With minimal operation, LightSpeed fully-automatic Digital Processing System single-handedly did the work of several teams, rapidly processing the vast amount of imagery. LightSpeed processes hundreds to thousands of km² of A3 imagery per day, producing high-end photogrammetric products.



Customer's Response

Vekta's Director Leo Watts commented, "The A3 camera has performed very well. Due to the restrictions of sun angle, weather and air traffic control, we needed a camera that was reliable and efficient with its capture." Watts added, "There is no point in having rapid capture if the imagery can't be supplied in a similar fashion. LightSpeed processed the imagery rapidly and at a high standard."

"Compared to other systems, we believe the A3 provides the most efficient end-to end-solution from capture to delivery for high resolution orthophotos over large areas, particularly urban areas that have flying restrictions in their airspace."



VisionMap Ltd. is a leading provider of digital automatic aerial survey and mapping systems. Its flagship A3 solution, comprised of a large format camera and automatic processing system, is known for its capability to capture and process areas 2-3 times larger than other available systems in significantly less time, while reducing operational costs.

The system supports extremely large scale projects and automatically produces Aerial Triangulations, DSM and Orthophoto mosaic as well as Stereo Models and Geo-referenced Oblique images. VisionMap systems are successfully deployed around the world.

For more information, visit www.visionmap.com