



Giving you access to the most efficient digital aerial mapping system in the world



Accurate High Detail Digital Mapping in a fraction of the time

Accurately map whatever, whenever and wherever you need, even in weather conditions that are not considered optimum for conventional photogrammetry

TrueSouth is thrilled to bring the Gatewing X100 to the South Island. This leading-edge mapping and surveying system has the potential to add substantial value to a wide range of South Island-based industries.

Superbly engineered and designed, the X100 produces highly accurate results across an extraordinary choice of applications. The unmanned, simple, fixed wing aircraft carries a camera payload and flies in a regular scan pattern. It possesses both integrated flight planning with navigation software and integrated post-processing workflow for orthophotography and Digital Surface Model production. This is a comprehensive tool that can handle intensive use.

Ideal for New Zealand conditions, the easily transportable and compact aircraft has the endurance to cover large areas and difficult terrain. Its aerodynamic frame enables it to skid land on a variety of surfaces. The X100 can also operate in less favourable weather conditions (wind, light rain, cloud cover) giving it a significant edge over conventional photogrammetry.

With our base in Southland, the X100 and its revolutionary mapping and surveying capabilities is now readily accessible to South Island businesses and organisations.



The Sky is the Limit – Industry Applications

The versatility of the X100 is highly evident with its application in an ever growing number of industries. For conventional mapping and survey work it is proving to be ground-breaking. The X100 offers significant cost and time efficiencies and safety benefits to field work. This is an integrated end-to-end solution that produces current, highly accurate, best-quality results.

Topographic Surveying

The X100 provides:

- a uniform system in locations that are remote or difficult to access – useful for terrestrial surveying
- DSM and orthophoto mapping – incredibly useful to mining companies for internal progress reporting, environmental issues, volume calculation and planning

Vegetation Monitoring

The X100 imagery facilitates:

- planning of terrain development, in-depth prospecting and visual monitoring of crops and plantations – ideal for precision agriculture, farming and forestry
- highly accurate information for fertilisation management or targeted harvesting

Infrastructure Mapping

The X100 can undertake:

- on-demand rapid mapping services for land management, modelling and planning
- easy inspection of road works, bridges, ramps, rivers and flood areas
- large overviews.
- construction and engineering
- 3D modelling and visualisation
- waste management
- emergency work
- disaster management
- safety assessment
- forest monitoring
- flooding
- change detection
- erosion monitoring
- volume calculation (stock piles)
- research (eg. geology, archaeology)
- asset management

Aerial Mapping in Your Hands – Image acquisition

The flight of the X100 is fully automated from launch to landing.

It covers a pre-programmed area by parallel sweeps and consecutive, overlapping camera shots; collecting raw digital images from an altitude between 100–750 metres. The ground control station (GCS) monitors the flight. Pre-programmed safety features ensure a safe touch-down.

The resulting data set consists of a number of pictures that are tagged with their GPS co-ordinates.



TrueSouth Aerial Mapping produces highly accurate and detailed images in a variety of situations in the minimum of time.

The revolutionary Gatewing X100 is poised to take your mapping and surveying outcomes to a new level. Highly accurate, integrated and superbly engineered to produce best-quality results, it is well suited to South Island conditions where it can go virtually anywhere, anytime to map and survey anything.



Introducing a revolutionary aerial mapping and surveying system

Precision with Versatility – Image Products

The end products are geospatial data products – digital surface models and orthophoto mosaics.

These products are available at various quality levels. For projects that require high spatial accuracy Ground Control Points can be surveyed and used to adjust data. This is simply a matter of a few clicks while calibration data and raw images offer the potential for custom processing.

Digital Surface Model

The X100 is more efficient at measuring large areas – (tens of hectares to many square kilometres) than ground survey work which takes days or weeks to complete. A digital surface model (DSM) is a digital representation of ground surface topography including objects. It allows for the creation of very dense point clouds similar in density to a typical aerial LIDAR scanner but requiring less demanding and costly equipment.

Orthophotos

The X100 has the advantage over other orthophoto suppliers because it provides access to recent images and then digitally processes them into high-quality, true orthophotos using the DSM as ground truth data. X100 orthophotos are seamless, colourful and free of atmospheric haze.

Calibrated Imagery

The X100 is able to produce camera calibration data (internal calibration) and image orientation and position data (external calibration). This information can be processed in common photogrammetry suites and allows for the creation of custom products.

State-of-the-Art Vision Software – Image Processing

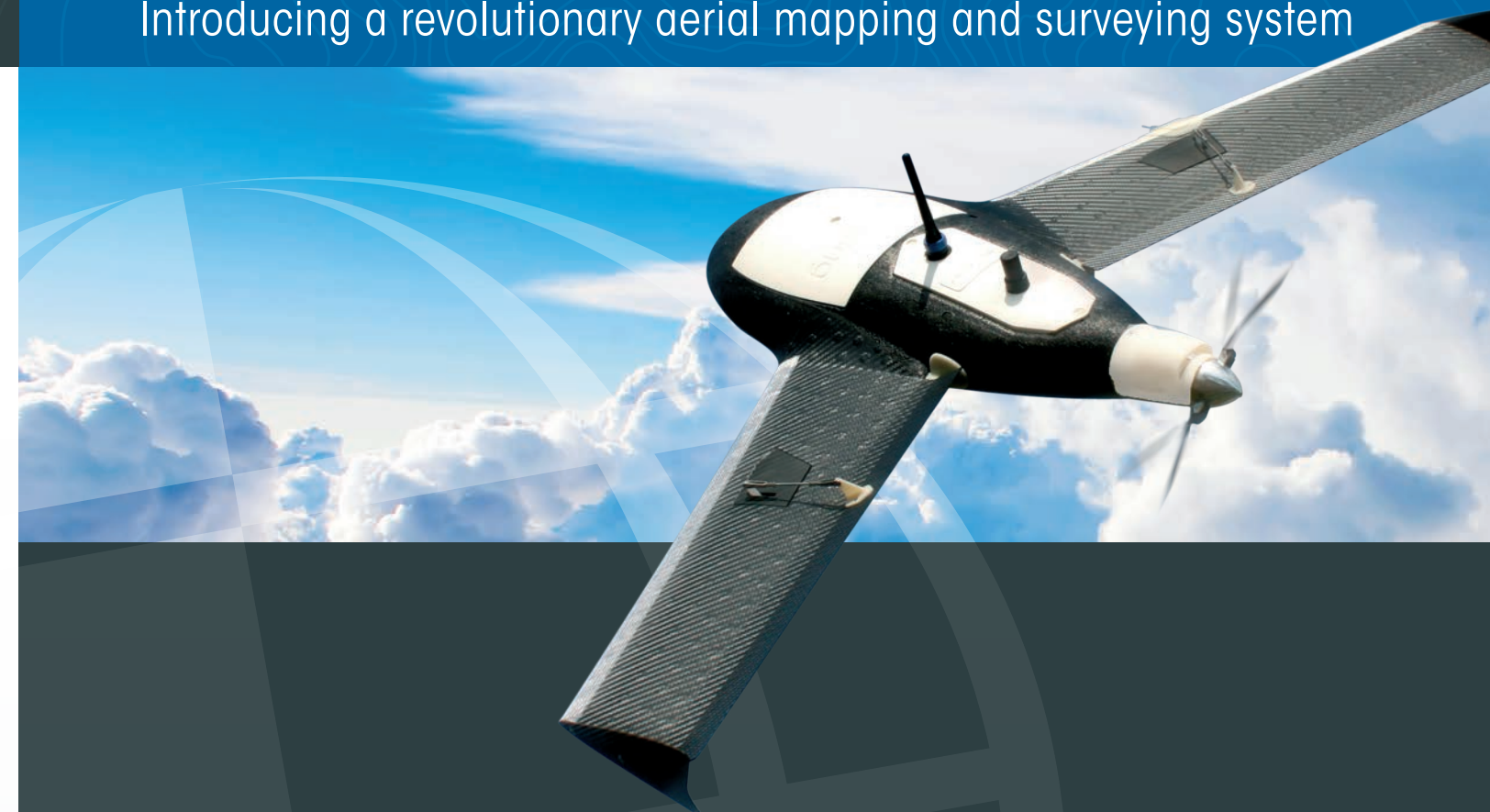
Automatic Aerial Triangulation (AAT) → Bundle Block Adjustment (BBA) → Point Cloud Computing (PCC) → Digital Surface Model (DSM) and Orthophoto Creation

This process generates the highly accurate outcomes of the X100.

The technology connects raw images by identifying a massive amount of corresponding points (AAT) and uses this information to accurately register the position and orientation of the aerial images (BBA). Powerful calculations result in the creation of dense point clouds (PCC) which generate the digital surface models (DSMs) and orthophoto mosaics. The orthophotos and elevation models can be geo-referenced to your system of choice.

Reaping the Results

Full processing produces pixel-size spatial accuracy and survey grade DSMs or point clouds for your CAD or GIS environment. It can take just a few to many hours to complete. With rapid orthophoto processing your project can be investigated on a basic quality level and resolution is about one-fourth that of full processing. It takes just a few minutes to half an hour to complete.



The Gatewing X100 is now available in the South Island
Highly accurate • Integrated end to end solution
• Extraordinary range of applications • Ideal for New Zealand terrain and weather conditions • Southland Based



78 Doon Street, PO Box 534
Invercargill 9840
New Zealand
P: +64 3 218 8030
FP: 0800 878 376
F: +64 218 8044
E: aerial@truesouth.co.nz
W: www.truesouth.co.nz

