Airborne Mapping System for Precision Agriculture

Precise > Accurate > Quality

A complete system for accurate airborne data capture and photogrammetric mapping using an unmanned aerial vehicle
Large area capture of airborne data

Maptek™ provides an effective airborne mapping system to capture and process photogrammetric data for geospatial agricultural and environmental applications.

The Maptek airborne mapping system captures and processes photogrammetric data for a wide range of precision agriculture tasks. Create topographic maps of vast land holdings for accurate design of irrigation and drainage systems. Monitor and manage crops through extended spectrum mapping which allows chlorophyll levels to be recorded.

Detailed photogrammetric mapping data is captured with unparalleled accuracy by the TopoDrone-100 unmanned aerial vehicle (UAV). The innovative gyro-stabilised, 3-axis camera mount counteracts aggressive drone flight movements to capture drift-free vertical photography.

The aircraft can fly under clouds and in strong winds, without increasing overlap, photograph count and processing requirements. Flight paths are predetermined with Maptek FlightControl.

Features
- Down to 10mm horizontal accuracy and 25mm vertical accuracy
- Gyro-stabilised camera mount corrects pitch, roll and yaw
- Direct georeferencing system
- Overlap requirements unaffected by wind
- Calibrated 24 megapixel onboard camera
- Near Infrared (NIR) lens
- Rapid data acquisition
- 20mm GSD at 120m altitude

Benefits of an integrated photogrammetry system
- Integration: Use in conjunction with laser scanning survey systems
- Accessibility: Regular geospatial capture in difficult to access areas
- Visualisation: Import, view and assess all data in true 3D
- Safety: Quickly capture data with little impact on operating machinery
- Decision making: Detect, map and monitor changes to vegetation
- Modelling: Terrain models with accurate elevation to 25mm
- Engineering planning: Create vast topographic maps to accurately design moving irrigation systems and drainage lines

The quality of manned airborne photogrammetry with the speed and flexibility of a UAV
TopoDrone-100 features and capabilities

- Accuracy: Calibrated, full frame 24 megapixel onboard camera
- Innovative: Gyro-stabilised, 3-axis camera mount
- Connectivity: Direct georeferencing system
- Simple operation: Integrates with Maptek FlightControl and FlightDeck
- Image accuracy: Down to 10mm horizontal and 25mm vertical
- Operability: Catapult launching system and 40 minute flight time
- Safety: Low battery and emergency recovery options
- Positional accuracy: Optional 100 Hz dual-frequency L1/L2 code/carrier phase GLONASS and GPS receiver with SBAS, DGNSS and PPK positioning

Applications and output

- Create topographic maps of vast land holdings
- Crop yield prediction and management
- Vegetation mapping including pest weed mapping
- Vegetation stress management
- Monitor effects of fertiliser application
- Irrigation and drainage design projects
- Large scale earthworks
- Dam design and catchment mapping
- Measure and monitor blue-green algal outbreaks
- Post disaster mapping
- Map wildfire effects on vegetation
- Measure environmental refuse volumes and monitor dump sites
- Noise modelling

Reasons to use Maptek

1. Near Infrared (NIR) lens filter provides spectrum type results
2. Postflight QA/QC system
3. Import, view and assess all data in true 3D
4. Quickly capture data with little intrusion to machinery or livestock
5. Accurate, reliable results
6. Safe and cost effective solution for capturing photogrammetric data over large areas
Industry Leading Global Solutions

Maptek is the leading global provider of innovative software, hardware and services for the mining industry. More than 1700 customers in 75 countries rely on Maptek. Maptek mining technology can be applied throughout the entire mining life cycle. Our solutions help reduce operating costs and improve performance, productivity and profitability. Maptek provides expert consulting, training and support services to ensure you get the most from your investment in our products.

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