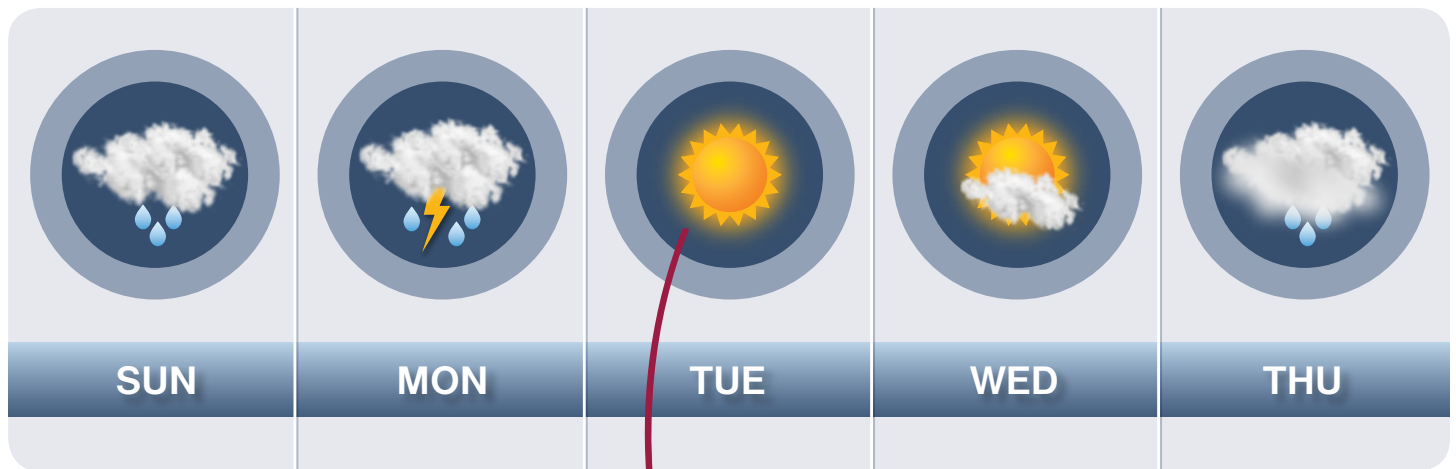


# A<sup>3</sup> Digital Camera and Automatic Processing System



*In a single day your image acquisition can be more than*

*5000 KM<sup>2</sup>  
15 CM GSD*





## A<sup>3</sup> Digital Mapping System

VisionMap's A<sup>3</sup> digital mapping system, which includes an advanced digital aerial camera and an automatic ground processing system, captures and processes areas 2-3 times larger than competing systems, in significantly less time.

### A<sup>3</sup> Advantages

- Superior data acquisition productivity and high image resolution, even at high altitude, using 300 mm focal length optics.
- Flexibility in flying altitude.
- Total automation of all processes and high computational efficiency.
- Multiple products from one flight: Orthophoto, DTM, Super Large Frames (SLF) for stereo mapping and accurate Vertical and Oblique (V&O) imagery.
- High quality products that meet all national mapping standards.
- Lightweight, small form factor and easy installation.
- No preliminary DTM, no Ground Control, and no IMU required.

### A<sup>3</sup> Benefits

- Reduces flight hours, operational costs and CO2 emissions.
- Minimizes weather and flight limitations.
- Reduces operational costs with a fully automatic processing system.
- Provides Orthophoto, stereo models for mapping as well as photogrammetric oblique imagery with one integrated system in one flight.

Orthophoto GSD (meter)	0.05	0.10	0.15	0.20	0.25	0.30
Max allowed oblique angle (deg from nadir)	10	15	17.5	22.5	25	25
Altitude above ground (feet)	5,500	10,900	16,400	21,900	27,300	32,800
Ground Speed (knot)	160	230	240	240	260	300
SLF Area (sq.km)	1.34	7.19	19.01	49.79	94.40	136.27
SLF Area (sq.mile)	0.52	2.77	7.34	19.23	36.45	52.62
Sweep Width (meter)	1,623	4,250	7,313	13,389	19,469	23,391
Orthophoto coverage (sq. km/hour)	158	683	1,261	2,212	3,363	4,662

## What Makes A<sup>3</sup> Productive?

### Superior Image Acquisition Efficiency

A<sup>3</sup> covers more area in any given resolution by allowing your airplane to fly higher, faster and with wider flight line spacing - covering a larger area than other systems do.

### Scalable Automatic Processing

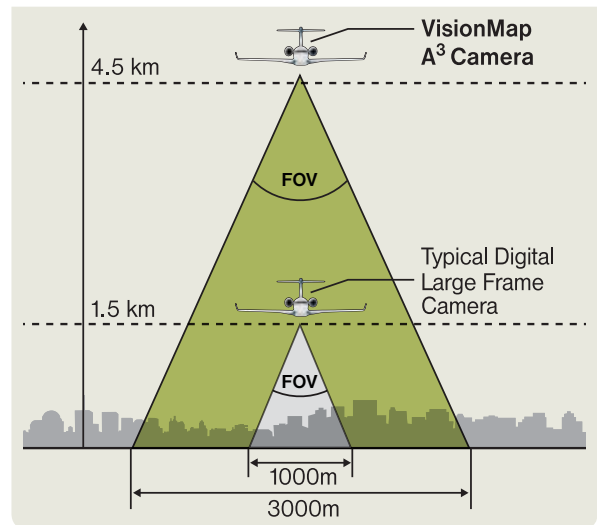
A<sup>3</sup> solves extremely large blocks, matching millions of tie-points and creating orthophoto mosaic in a fully automatic seamless workflow without manual operation or data editing.

### Multiple Products in One Flight

A<sup>3</sup> produces multiple high-resolution vertical and oblique mapping products from a single flight, without additional costs:

- Accurately solved multi-directional oblique frames of a given area
- Accurate bundle adjustment
- Super large frames for stereo models
- Orthophoto, DTM and DSM

## Higher Altitude, Larger Coverage, Same Resolution (example 15 cm GSD)



## What Makes A<sup>3</sup> Accurate?

### Super Large Format - Enabling Accurate Aerial Triangulation

The camera's extremely wide field of view provides an optimal base ratio as well as multiple images overlapping, ensuring high accuracy results in aerial triangulation.

### Block Adjustment Using Millions of Tie Points

A<sup>3</sup>'s processing system is unique in its ability to automatically extract and match millions of tie-points in any given block size, creating robust bundle adjustment, with excellent photogrammetric accuracy for all frames, including oblique images, without ground control and IMU's.

### Multi-Directional Images

A<sup>3</sup>'s rotating camera design captures each point numerous times from different angles allowing exceptionally redundant and computationally stable automatic processing and multi-ray photogrammetry.

### High Resolution Imagery

A<sup>3</sup> system's long focal length optics capture high-resolution imagery, increasing the accuracy of the automatic matching process as well as enabling the collection of tie points in areas that would look uniform in lower resolution.

## What Makes A<sup>3</sup> Simple-to-Use?

### Compact System, Easy Installation

A<sup>3</sup> was designed for complete ease of use, with compact size (0.1 m<sup>3</sup>) and lightweight (35 kg). The camera is easy to install - attached to standard stabilizer attachment points, ready to use on most camera-ready aircrafts.

### Replaceable Storage

A<sup>3</sup> uses Flash memory, storing up to 0.4 TB of data which is equivalent to 5 hours of continuous photography, which can be replaced during flight missions.

### Seamless integration with customer's photogrammetric environment

The processing system provides quantitative and geospatial visual reports to reduce the resources required for QA and interfaces to existing photogrammetric applications - fitting into the customer's environment.

### Standard Export Formats

All A<sup>3</sup> system outputs are compatible with industry standards, allowing easy integration of the A<sup>3</sup> into any photogrammetric workflow.



### A<sup>3</sup> Technical specifications

Camera	Description
CCD (dual)	Kodak KAI-11002
Frame Size (pix)	2 * 11 Mpix
Color	RGB (Bayer)
Frame Rate	2 * 7.5 frames per second
Pixel per Second	160 Million
CCD Bit per Channel	12
Pixel Size (µm)	9.0
Optics	Dual reflective lens system
Focal Length (mm)	300
Motion Compensation (MC)	Mirror-based optical compensation and stabilization
On-Board Compression	Jpeg 2000
On-Board Storage	400GB, Solid-state, Replaceable
Data Transfer to Server	Via disk drawer, SATA2
GPS	Dual-frequency GPS
Weight (kg)	35
Camera Unit Size (cm)	50 x 50 x 40

### About VisionMap LTD

VisionMap is a leading provider of digital, automatic mapping systems. Leveraging unique multidisciplinary expertise in mapping, photogrammetry, electro-optics and computer vision, VisionMap has created an innovative image acquisition and data processing system, which creates new opportunities for companies that operate in the geospatial data space.

To learn more visit: <http://www.visionmap.com>

