VisionMap Mapping Solutions

VisionMap Systems

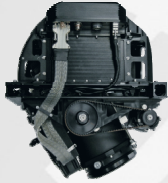| A3 Edge	MIST-U	MIST-IR	MIST-G
Manned	Manned & UAV	Manned & UAV	Manned & UAV
2 telescopes	1 telescope	1 telescope	2 telescopes
RGB & NIR	RGB	Thermal	RGB & Thermal
42 kg	11 kg	11 kg	50 kg

Vertical & Oblique High Resolution Images
Interpretation of Large Areas
Stereo Compilation
Dense DSM creation
Orthophoto production
3D City modeling

A3 Edge & MIST-IR aerial camera

Camera	A3 Edge	MIST-IR
Focal length (mm)	300	300
GSD from 1,000 m	2.5 cm	5.0 cm
Max FOV (°)	110	80
CCD pixel size (μ)	7.4	15.0
CCD size (pix)	4,864 x 3,232	1,280 x 1,024
Maximal footprint (pix)	75,000 x 9,600	27,600 x 1,280
Max image size (Mpix)	700	34
Wave length	RGB / RGB+NIR	MWIR
Color Depth (bit)	12	12
Vertical & Oblique	Yes	Yes
Motion compensation	FMC, RMC, VC	FMC, RMC, VC
Weight (kg)	42	11
Camera dimensions (cm)	50*60*60	24*34*39
Operation temperature (°C)	-15° - +55°	-15° - +55°

A3 Edge aerial survey and mapping system

Aerial survey camera
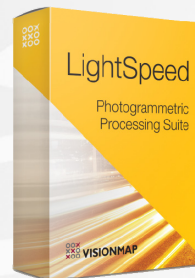
LightSpeed Photogrammetric Suite

Ground processing system
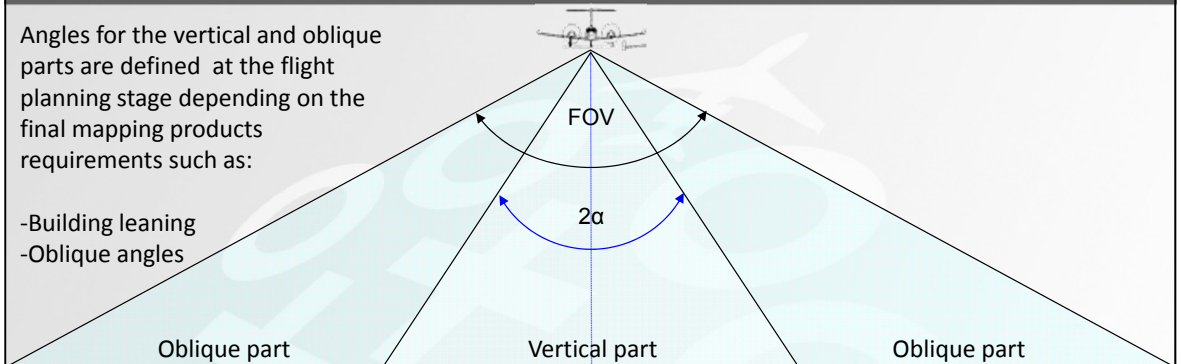
A3 Edge & Light Speed features

- Highest aerial survey productivity – up to **11,000 sq.km per hour**

- Highest orthophoto productivity – up to **9,000 sq.km per day**

- Highest GSD from a given flight altitude – **2.5 cm every 1,000 m**

- Vertical and oblique images by one camera

- AT accuracy without Control Points – **20 – 50 cm**

- Fully automatic processes

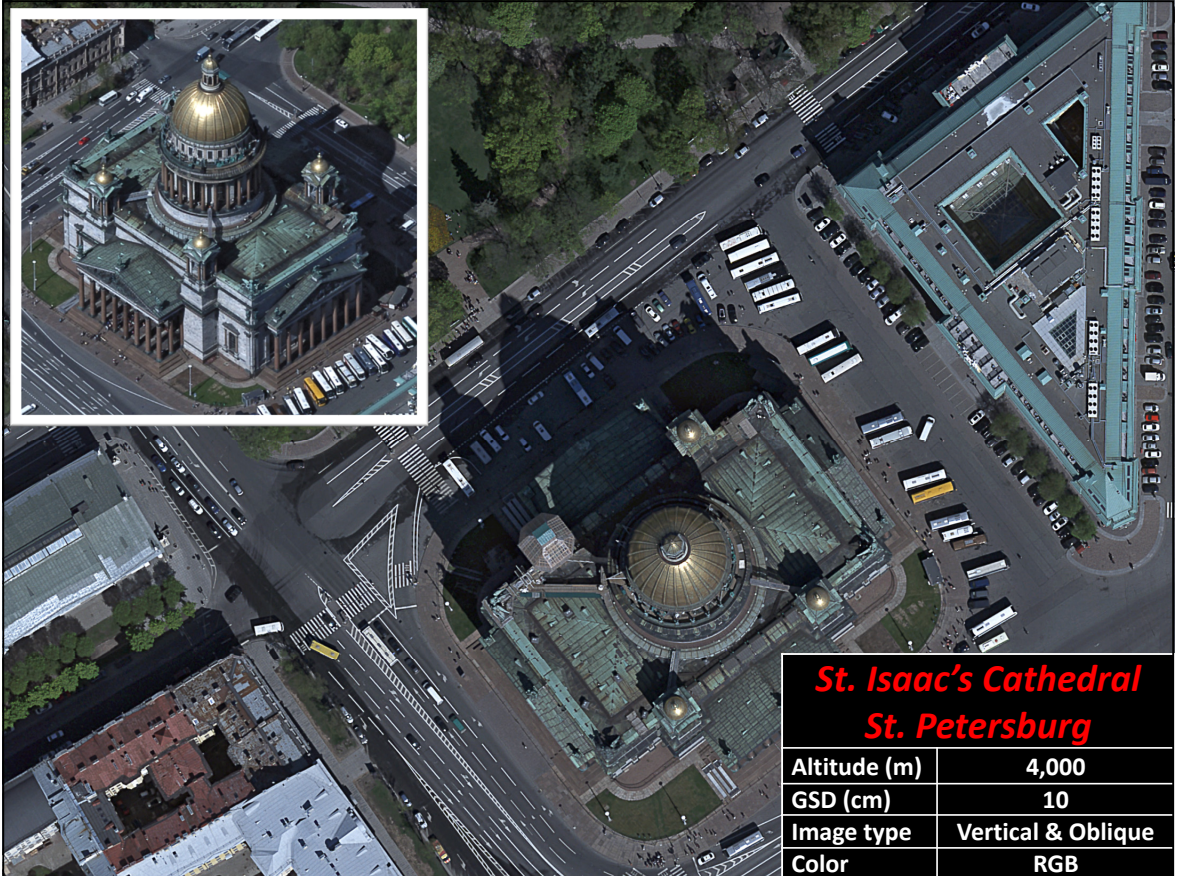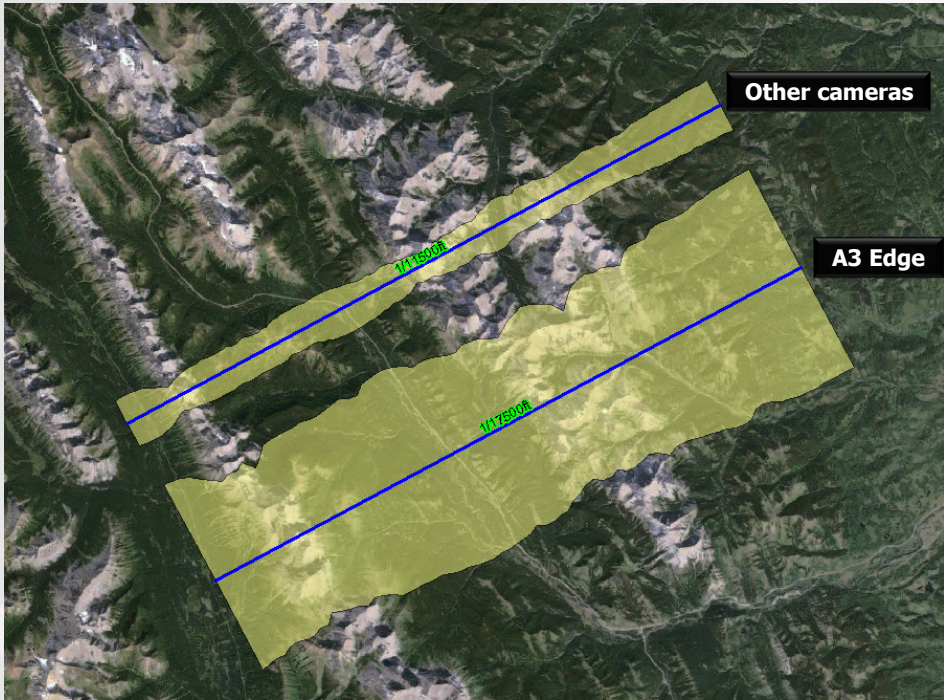- No need for field geodetic works

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A3 Edge images

Angles for the vertical and oblique parts are defined at the flight planning stage depending on the final mapping products requirements such as:

-Building leaning
-Oblique angles

FOV

2α

Oblique part   Vertical part   Oblique part

Other cameras

A3 Edge

1/11500ft

1/17500ft

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VisionMap Proprietary

7

St. Isaac's Cathedral St. Petersburg	
Altitude (m)	4,000
GSD (cm)	10
Image type	Vertical & Oblique
Color	RGB

Peter and Pavel Fortress St. Petersburg

Altitude (m)	4,000
GSD (cm)	10
Image type	Vertical & Oblique
Color	RGB

Forest Red Strugi

Altitude (m)	5,500
GSD (cm)	14
Image type	Vertical
Color	CIR
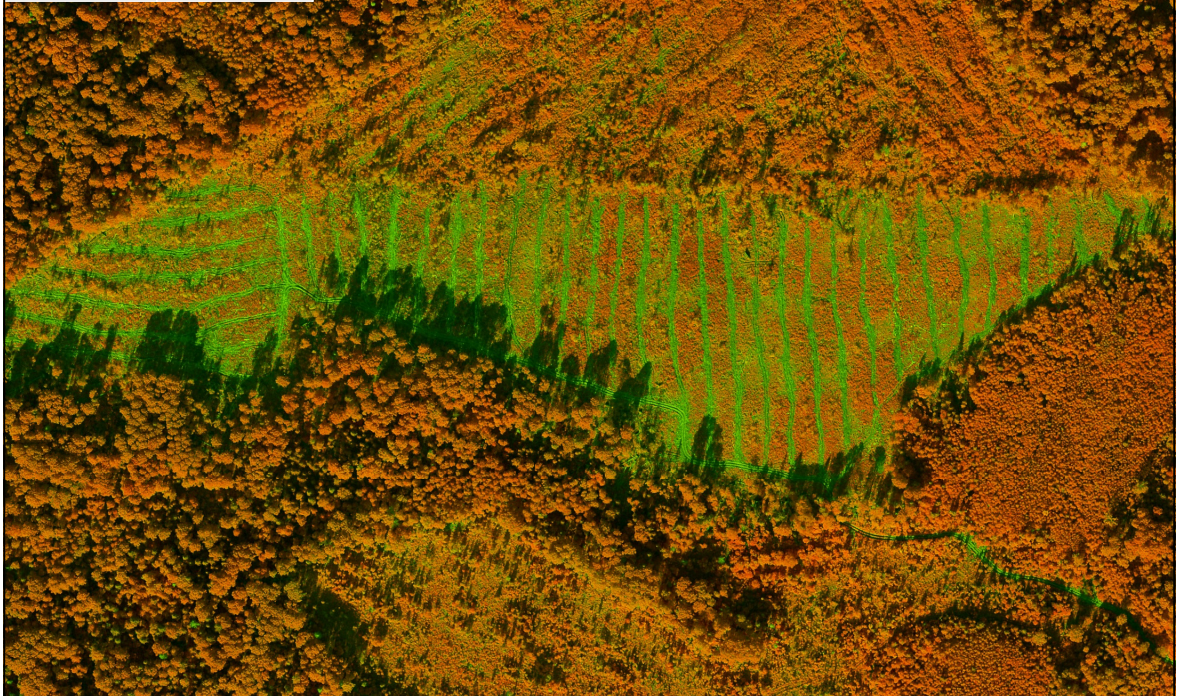
Forest area	
Altitude (m)	5,500
GSD (cm)	14
Image type	Vertical
Color	RGB/CIR
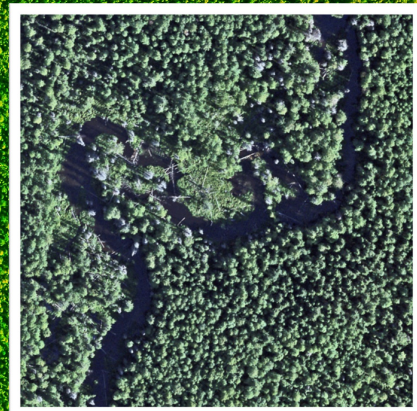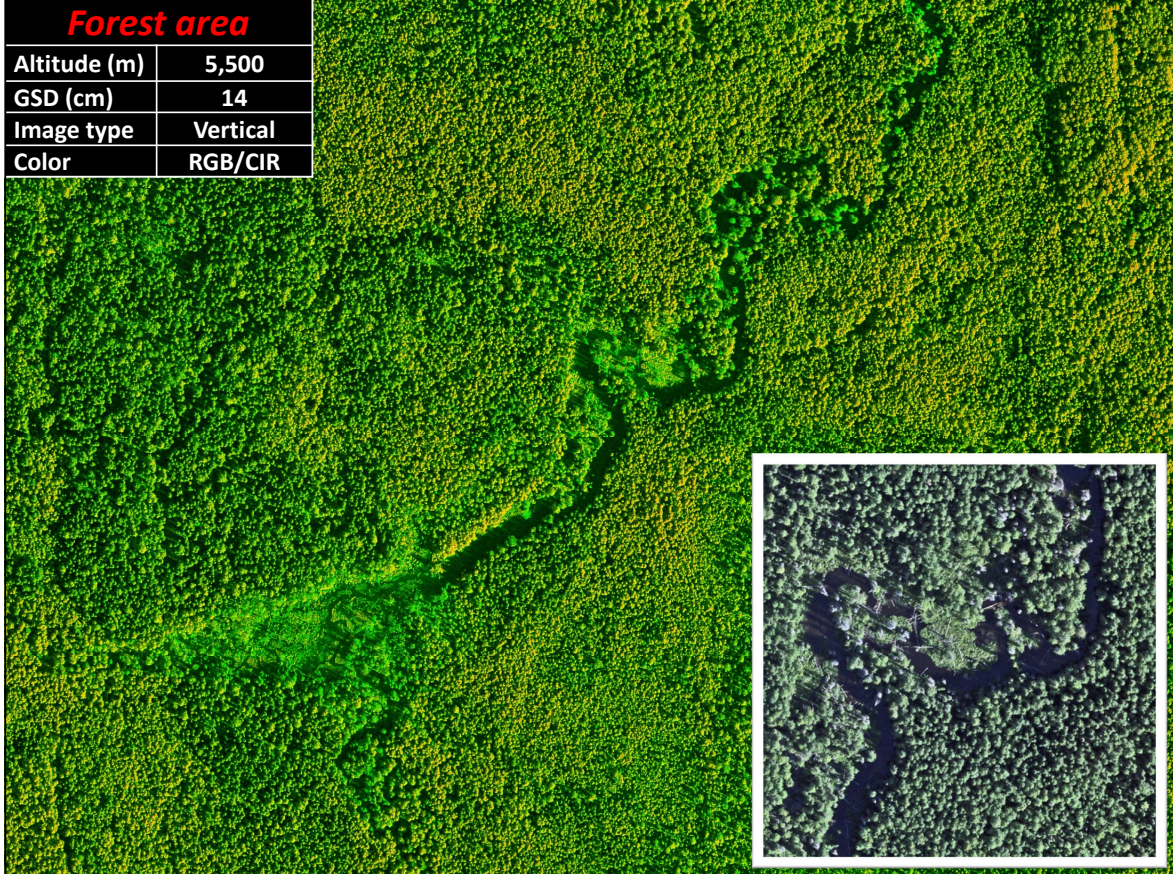
Valparaiso	
Altitude (m)	3,400
Image GSD (cm)	8
Ortho GSD (cm)	10
Image type	Orthophoto Oblique
Color	RGB
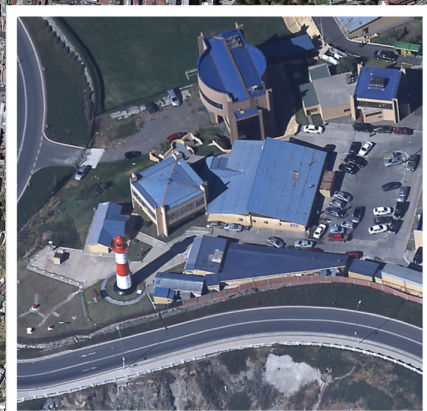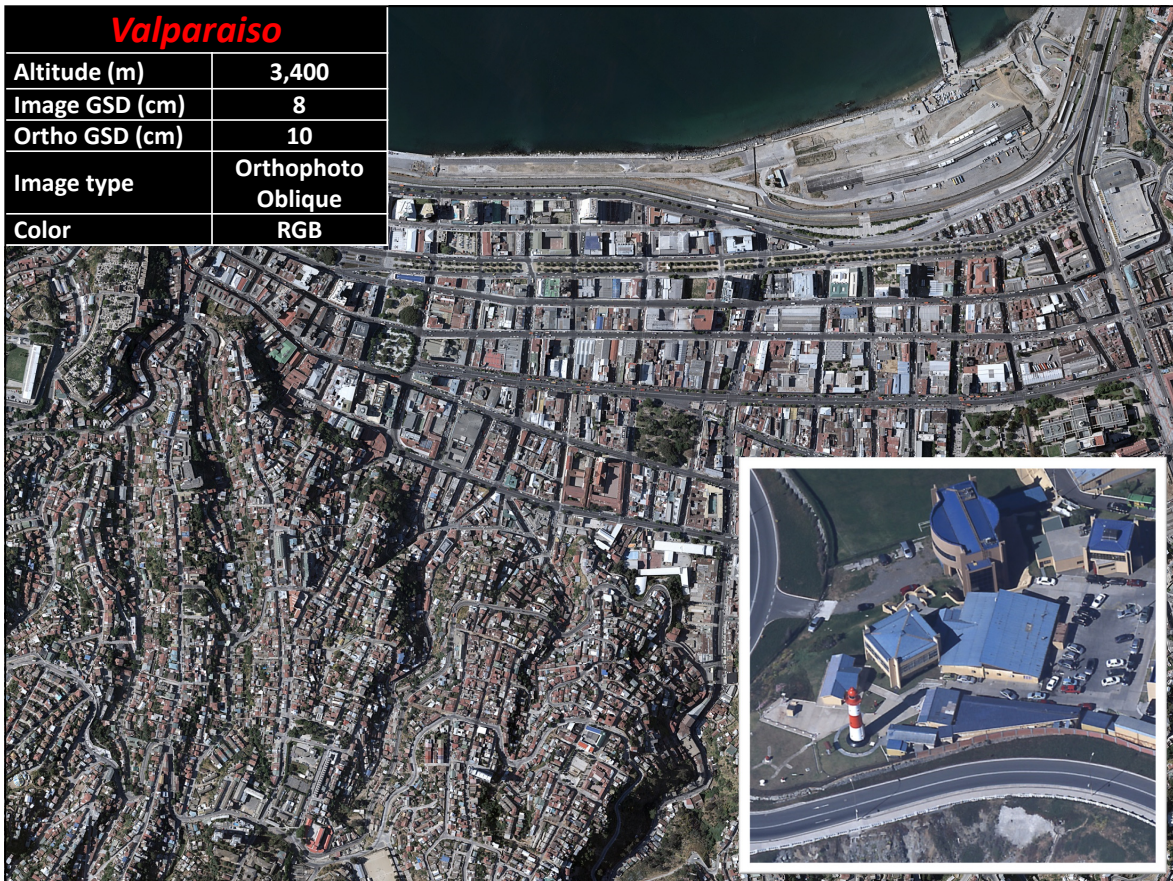
Valparaiso	
Altitude (m)	12,500
Image GSD (cm)	30
Ortho GSD (cm)	37
Image type	Orthophoto
Color	RGB

MIST-IR camera for Thermal Mapping
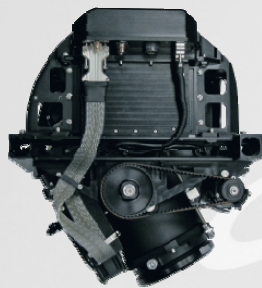
Built-up area	Environment Protection
Heat or cooling loss from buildings	Wildlife Surveys
Rooftop Surveys	Animals tracking and counting
Urban Lighting Mapping	Marine mammal surveys
Pipeline Leaks Mapping	Waterfowls
Power Line Problem Detection	Monitoring of volcanoes
Underground Steam Line Monitoring	Coastal management
Power Plants Monitoring	Stream temperature monitoring
Highway, Roads and Bridge Inspection	River Pollution
Coal and gold mining applications	Forest Inventory and Analysis
Emergency Situations and HLS	**Agriculture**
Disaster management	Precision Agriculture
Search and rescue operations	Irrigation Canal Leaks
Maritime monitoring	Crop Hybrid Selection
Forrest fire warning system	
Fire detection and mapping	
Low enforcement	
Border control	
Public security	
HLS	

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| Germany	
Altitude (m)	1,600
Image GSD (cm)	8.5
Image type	Orthophoto
Color	TIR
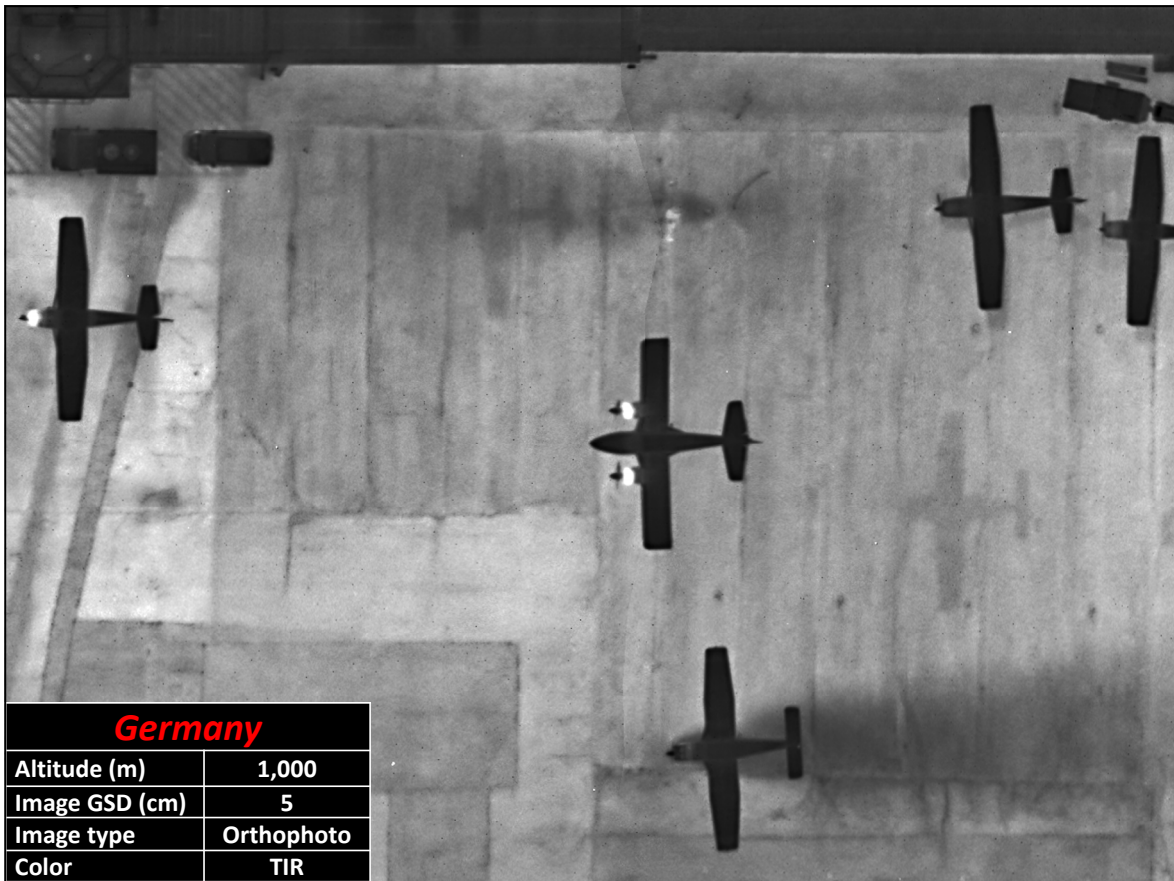
Germany	
Altitude (m)	1,000
Image GSD (cm)	5
Image type	Orthophoto
Color	TIR

LightSpeed photogrammetric SW

- **Flight Planning** (TopoFlight for A3, Switzerland)
- **Navigation**
- **Camera management**
- **Flight Viewer**
- **Fast Mosaic**
- **Data Viewer**
- **Control and Processing Center** (web-based)
- **LightSpeed**
  - Aerial triangulation
  - DSM creation
  - Orthophoto production
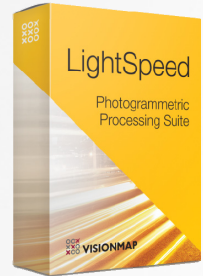
LightSpeed - Fastest Processing

LightSpeed processes thousands of km² per day

✓ Fully automatic AT, DSM and Orthophoto production

✓ Solves up to 250,000 vertical and oblique frames in a single block

✓ High accuracy with or without DGPS stations and/or GCPs

✓ Lowest operational costs

✓ One operator for a full end-to-end workflow

GSD (cm)	Block Area (sq.km)
5	1,000
10	5,000
15	12,000
20	23,000
25	38,000
30	56,000

Image GSD (cm)	5	10	15	20	25	30
LightSpeed Orthophoto Processing Speed (km²/24 hrs)	250	1,000	2,250	4,000	6,250	9,000

Note:
1. Processing productivity is calculated for a fully automatic A3 processing not including DSM calculation and common manual processes like cut-line editing and QA.
2. Processing productivity is calculated for the VisionMap LightSpeed standard cluster, optimal aerial survey parameters (forward overlap -55%, side overlap – 60%) and assumes parallel processing of several projects.

A3 Edge oblique images with Oblivision

3D model with A3 Edge and Acute3D

Shateau Lapallise, France

Thank You

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