





Our product portfolio







EAGLE

26,460 pixels across track together with a unique user-exchangeable lens system make one of the most versatile aerial systems on the market.







One camera – four lens kits

The UltraCam Eagle features a user-exchangeable lens system



80 mm PAN



100 mm PAN



120 mm PAN



210 mm PAN

40 mm RGB & NIR

70 mm RGB & NIR

27 mm RGB & NIR

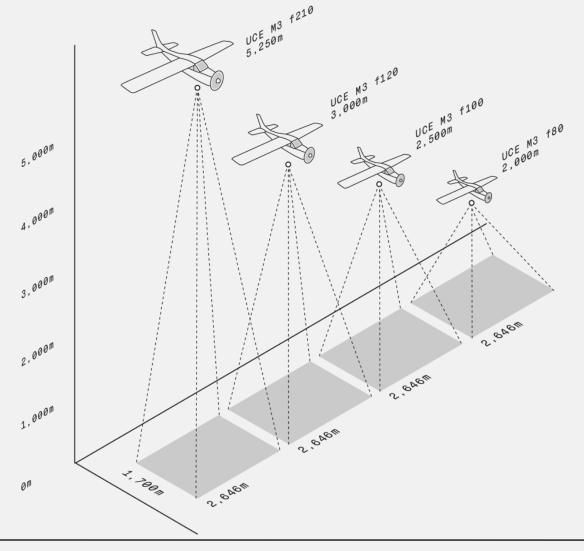
33 mm RGB & NIR





Greater efficiency than ever before.

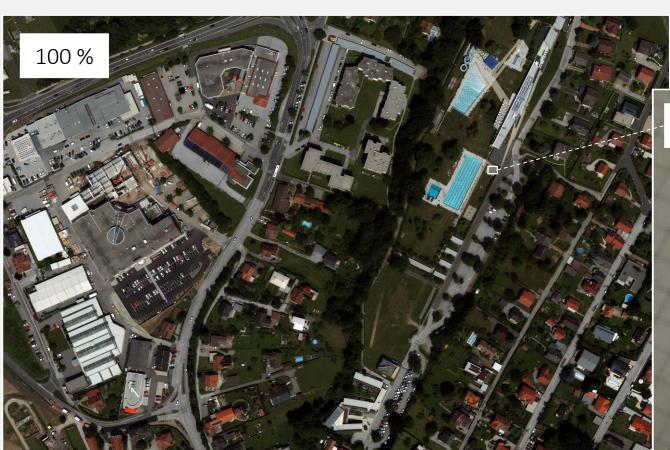
From lower-altitude engineering applications to high-altitude orthophotography projects:
Customers can exchange lens systems based on their mission needs.



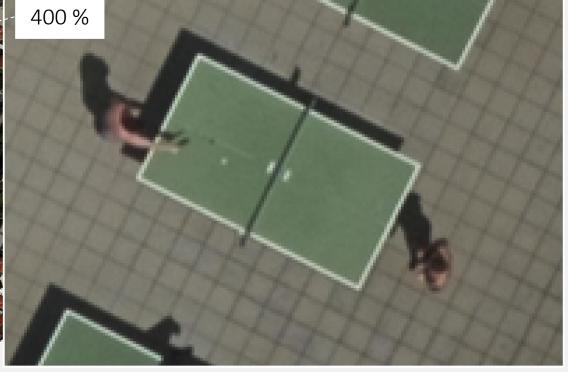




Capture the smallest details with an ultra-large footprint



A ping pong balls has a diameter of 40 mm.



Gleisdorf, Austria 2015 • UltraCam Eagle • GSD 3 cm • RGB • 1200 m AGL





OSPREY

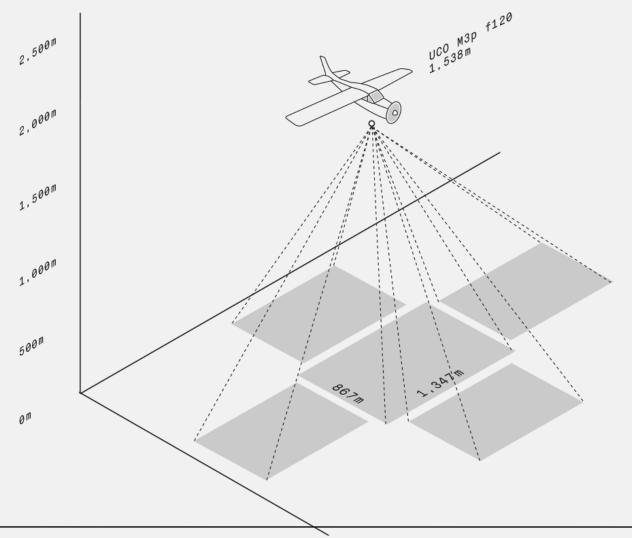
Extending a full photogrammetric nadir camera with oblique capture capability in four directions.











Best-in-class flight collection efficiency.

The UltraCam Osprey Mark 3 Premium uses the full swath width of the photogrammetric nadir cone (13,470 pixel) in conjunction with the perfectly configured oblique image overlap.







Create 3D models of amazing fidelity & accuracy.

The intuitive end-to-end UltraMap workflow features color-balancing and dehazing of nadir and oblique imagery as well as the ability to automatically generate 3D cities.







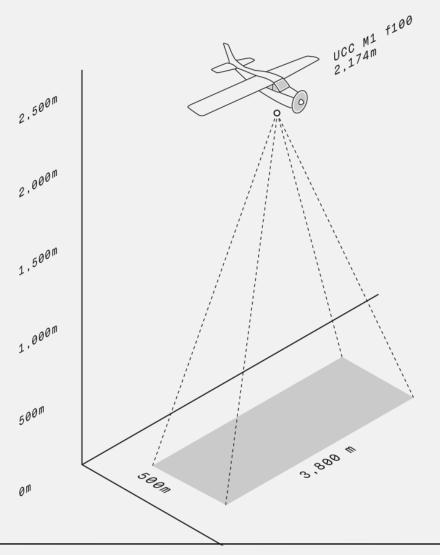
ULTRACAM

CONDOR

The UltraCam Condor M1 is the single-source data acquisition solution for wide-area and high-altitude mapping @38,000 pixels across the flight strip







Everything you need.

Basic classification needs are supported by a NIR channel.





UltraCam Condor Results



Flight Mission Baden Württemberg 2019 Detail: City of Stuttgart UltraCam Condor, 20 cm GSD



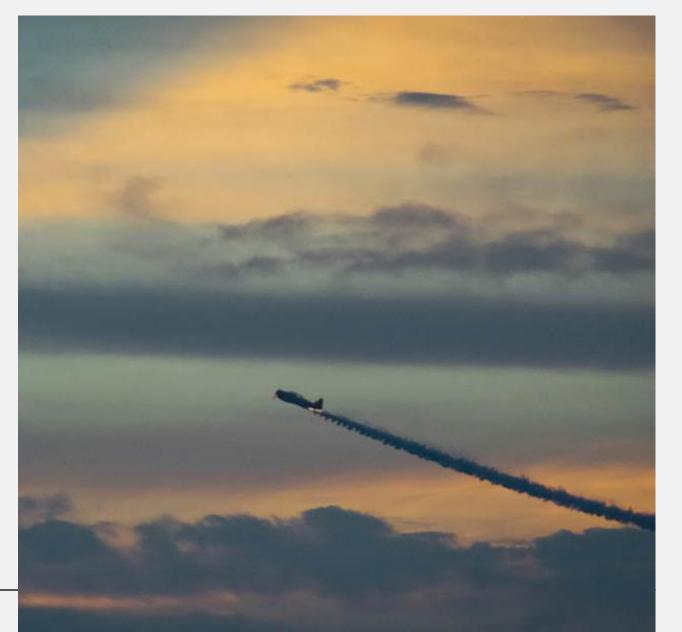






Long years of experience.

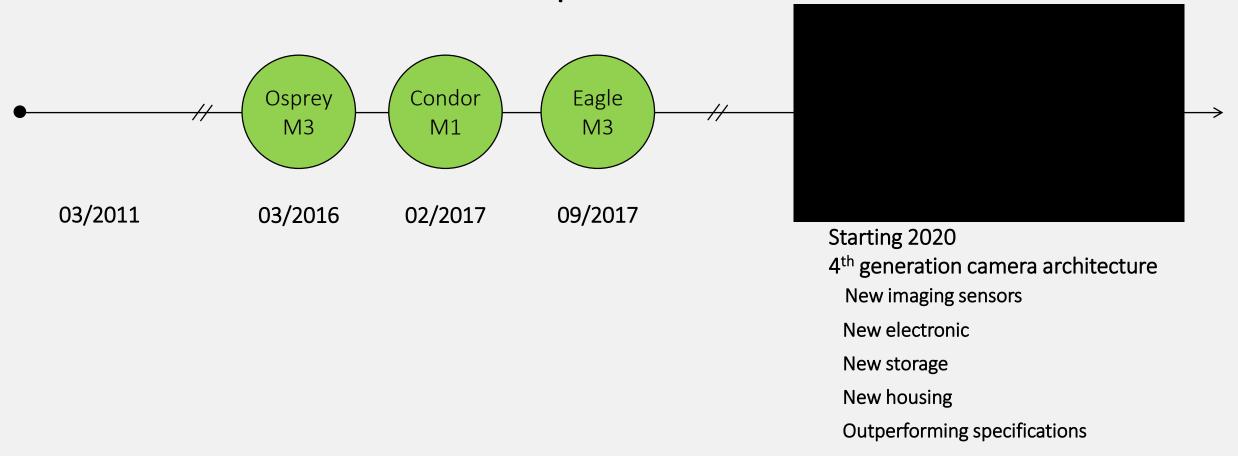
The predecessor model was used exclusively to provide Bing Maps imagery with stunning 30 cm blanket coverage of the continental US and Western Europe in two flight seasons.







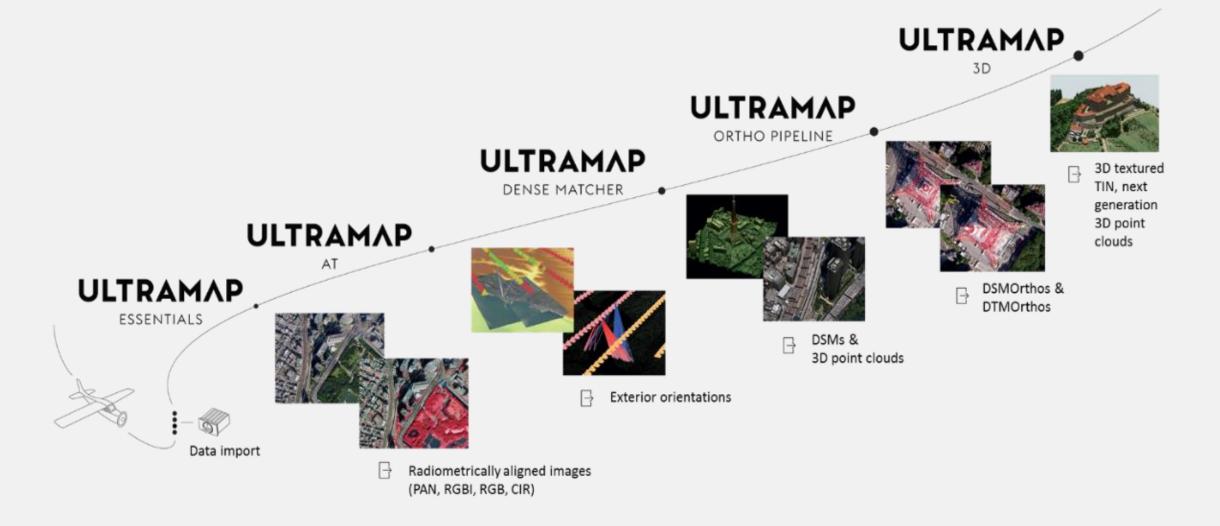
Aerial camera roadmap





UltraMap Software



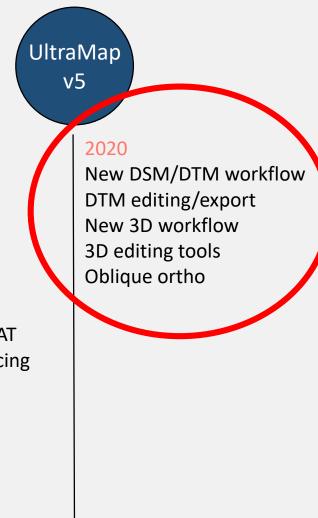


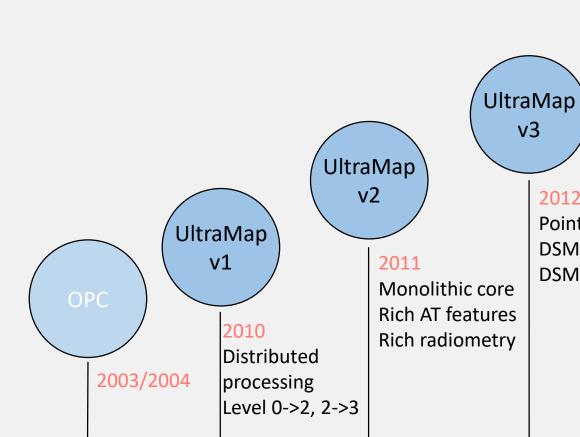


Vexcel Imaging GmbH

UltraMap generations







2012 Point cloud DSM/DTM DSMOrtho/DTMOrtho

v3

Eagle M3 Condor M1 +50k projects Nadir & oblique AT New color balancing 3D TIN

Oblique AT

2016-2019

UltraMap

v4

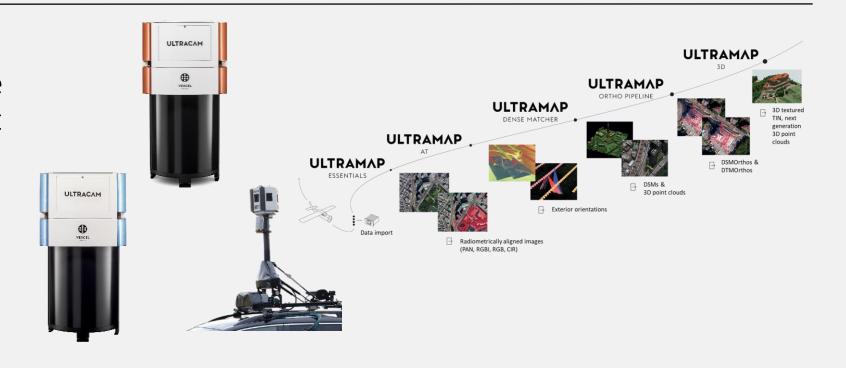
www.vexcel-imaging.com





Vexcel Data Program

Cloud-based imagery service "powered by UltraCam" that offers an unprecedented highly detailed image collection covering entire states and countries.









- Covering entire states and countries
- Currently capturing: USA, Australia, Europe
- Two program elements
 - "Blue Sky": Annual collections
 - "Grey Sky": Catastrophy monitoring & disaster response
- Content
 - High-resolution vertical & oblique aerial imagery
 - Derivative products
 - Advanced analytics







- Flying ressources rented from UltraCam customers
- Flying managed by Vexcel, flyer has the local knowledge
- Cameras provided by Vexcel, > 25 UltraCam cameras "daily" in the air for "Blue Sky" data collection
 - UltraCam Osprey M3p
 - UltraCam Condor M1
- "Grey Sky" uses locally available UltraCam ressources, regardless of camera types on a case-by-case basis
- Data mass production by UltraMap in Denver/Boulder & Graz by Vexcel teams
 - > 4500 processing cores
 - > 7 peta byte of storage on-premise
- Data access through AWS, Azure and web services



Current and Future Impact of GIC in the Insurance Industry





VEXCEL

GIC ALLIANCE

- ArcGIS Enterprise and ArcGIS
- Insurance Specific Applications (Underwriting, Claims)

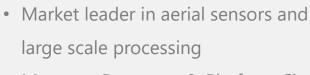




VEXCEL

IMAGING





- Manages Programs & Platform Cloud
 Services
- Collects and Processes Imagery & Data



- Newest strategic partner of the GIC
- Azure contributing cloud services to GIC
- Negotiated credits/discounts for members

GRAY SKY Disaster Response

- GIC Responds to every major catastrophe in the United States
- Imagery is available to members within 24 hours of collection
- Free access for 1st Responders
- Best possible resolution



VEXCEL

SONOMA COUNTY FLOOD



LEE COUNTY TORNADO



Vexcel Imaging GmbH

www.vexcel-imaging.com

Camp Fire and Woolsey

November 2018

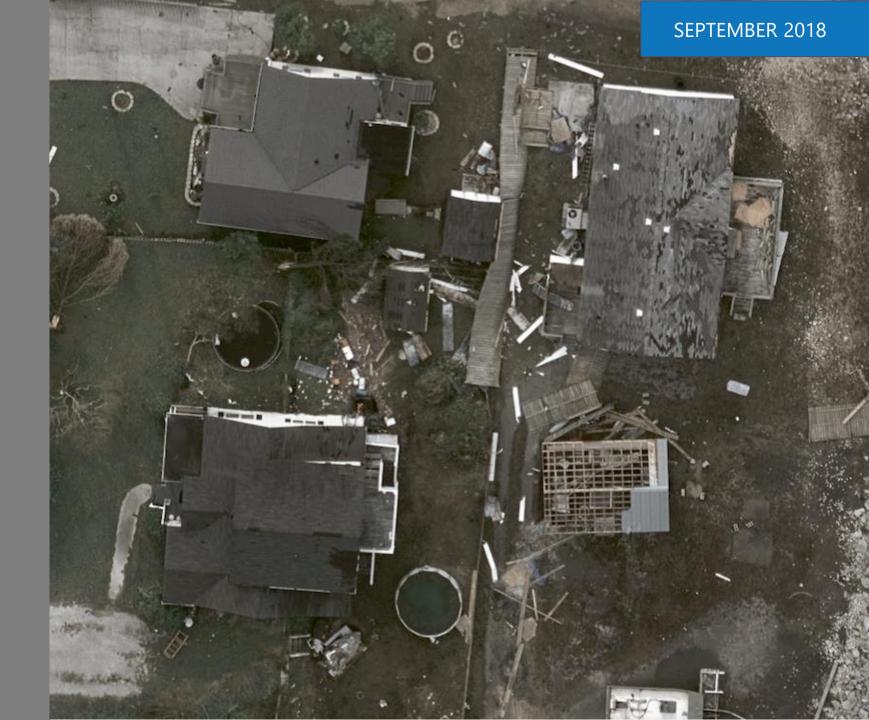
- Over 2,500 sq. km. of imagery
- Flown during active flight restrictions
- Additional imagery each day
- Under 24-hour turnaround
- USAF, National Guard, and FEMA priority imagery



Hurricane Florence

September 2018

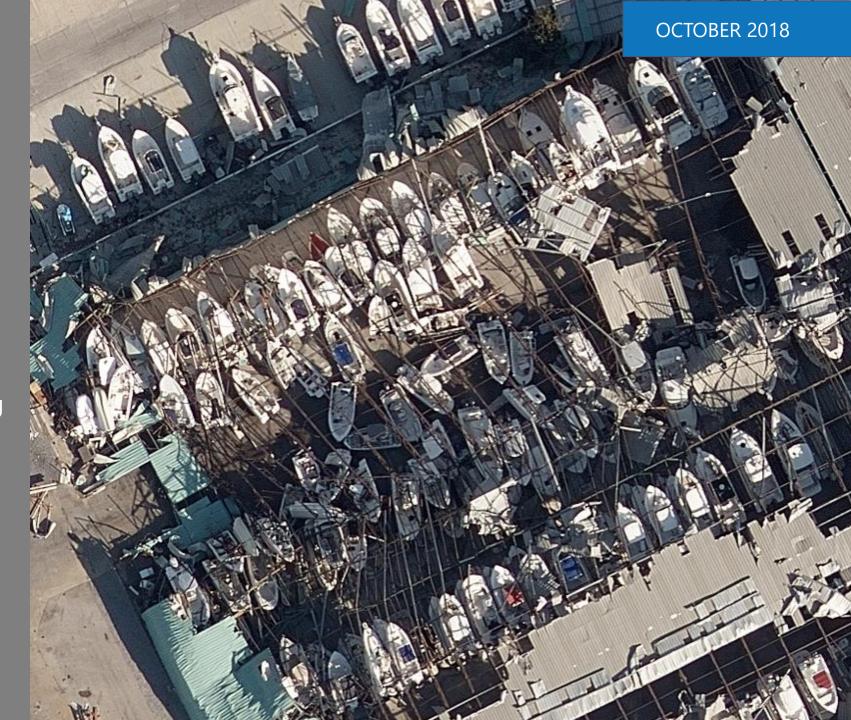
- 65,000 sq. km. collected
- Active partnership with FEMA and NOAA
- First deployment of Condor wide-area sensor



Hurricane Michael

October 2018

- 85,000 sq. km. collected, processed and delivered in 3 days
- Implemented daily member briefing
- Coordinated with FEMA and NOAA





70012323 Henry Roberts

25562 Vio Road San Juan, CA 92675

Show policy details

Adjust address

0575199720101033 2018-10-26 - 13:52

Client claims that recent storm damaged roof Of the house and needs full replacement

Show full claim Attachments

ROOF DAMAGE

0% 20% 60% 80% 100%

Cannot detect any roof damage

MARK AS

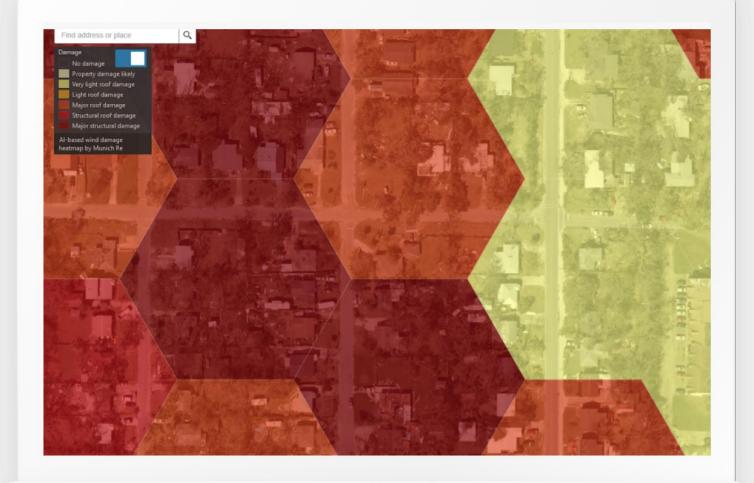
☐ Onsite inspection needed
☐ Elevate to supervisor
☑ Potential fraud
☐ Unable to assess at this time

Share Back



CATASTROPHE ANALYTICS

- Partnership with THE LAB at Munich Re
- Automated damage classification following major CAT events
- Heavy usage following Hurricane Michael
- Better analytics for Fraud Detection



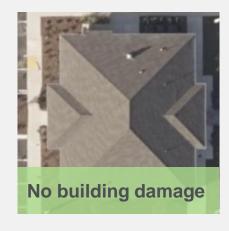


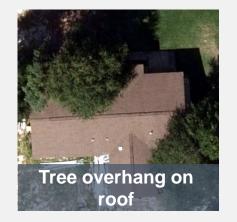
Building damage

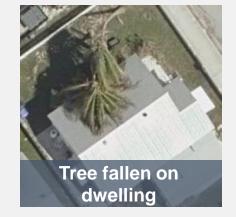




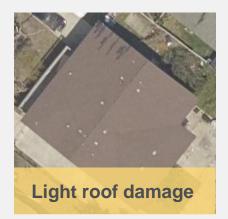




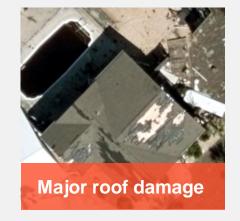


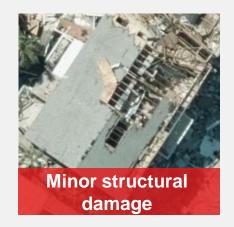














2018 Gray Sky Calendar

JAN	FEB	MAR	APR
		Flood - Louisville, KY	Flood - Xenia, OH Tinder Wildfires
MAY	JUNE	JULY	AUG
	Tornado - Connecticut	Tornado - Pella, IA Tornado - Marshalltown, IA	Carr Wildfire
SEPT	ОСТ	NOV	DEC
Tropical Storm Gordon Hurricane Florence	Hurricane Michael	Woosley Fire Camp Fire	







American Red Cross



















An important mission of the GIC is to have **the insurance industry lead the way** in improving response and relief efforts following disasters, and reducing FRAUD after major events.

The GIC is doing this by **transforming how critical information and imagery is collected and disseminated**, driving a coordinated effort across local, state and federal agencies and responders.

The GIC also aims to **increase public awareness** of these important initiatives, and in doing so improve the perception of the insurance industry's positive impact when it matters most



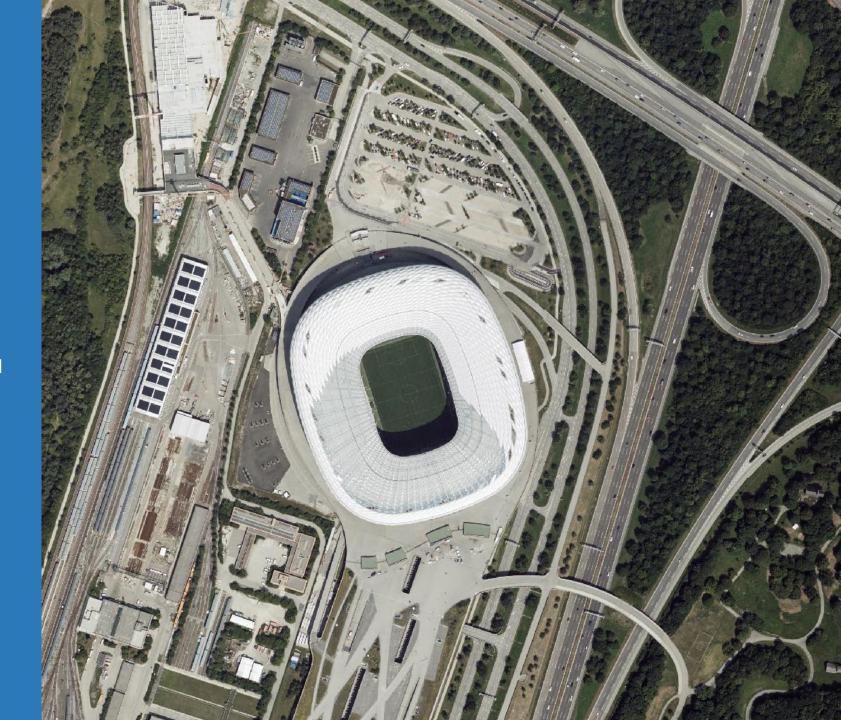
Currently for the CA wildfires, FEMA and the National Guard calculate that the GIC Imagery has been the definitive source in 60% of the

overall damage assessment and response.

BLUE SKY ANNUAL IMAGERY

NATIONAL MAPS:

High-resolution imagery @ 20 cm resolution over a two-year collection period by UltraCam Condor



BLUE SKY ANNUAL IMAGERY



Metro Maps:

- Ultra-high-resolution imagery and data @
 7.5cm resolution repeated annually buy
 UltraCam Osprey
- Coverage includes top metro areas = >>75%
 of countries population.
- 360-degree aerial imagery
- 5 views of a property









- Data resale
 - Direct
 - Global and local partners
- Customer
 - Large international mapping companies
 - Insurance industry
 - Local/State/Government entities
 - Basic maps
 - Thematic maps
 - 3D maps
 - 2D / 3D Cadaster
 - Inventory
- Licensing models
 - One-Time purchase
 - Data subscription plans

BLUE SKY ANNUAL IMAGERY

Aircraft Requirements



Condor collection (Condor Mark 1)

20cm nadir GSD

Altitude: About 14.500ft AGL

Speed: Not restricted, high speed essential

Aircraft type: Turboprop (+220 kts), twin or single engine

Endurance: +4 hrs

Examples:

King Air 90/200, Turbo Commander 690A/B/C, Piper Cheyenne, Cessna Conquest, Pilatus PC12

Aircraft generating image cut-off and/or lack Excluded:

speed

Osprey collection (Osprey M3p)

GSD 7,5cm nadir

About 3.800ft AGL Altitude:

Restricted to 110-115 kts Speed: Aircraft type: Slow single or twin engine

Endurance: +4 hrs

Examples: Partenavia P68, Cessna 210 (if exhaust is

extended), Piper Aztec

Aircraft generating image cut-off and/or have exhaust fumes visible in the obliques Excluded:

(e.g. C208, PC-6)





Summary

- VDP is the! investment area and growth future for Vexcel Imaging
- VDP was just started 2018 and is now (2019) already adding >75% of revenue to the comany with exponential growth
- UltraCam sensors & software are the backbone of the program
 - Other sensors can be added as needed
- Insurance industry drives "Grey Sky" and acts globally
- International expansion is key for Vexcel in "Blue Sky" and "Grey Sky"





