

# Новости IGI весной 2024 г.

## IGI news Spring 2024

Кристиан Гримм

Февраль 2024



**IGI**

**Интегрированные.**

**Геопространственный.**

**Инновации.**



# **IGI news**

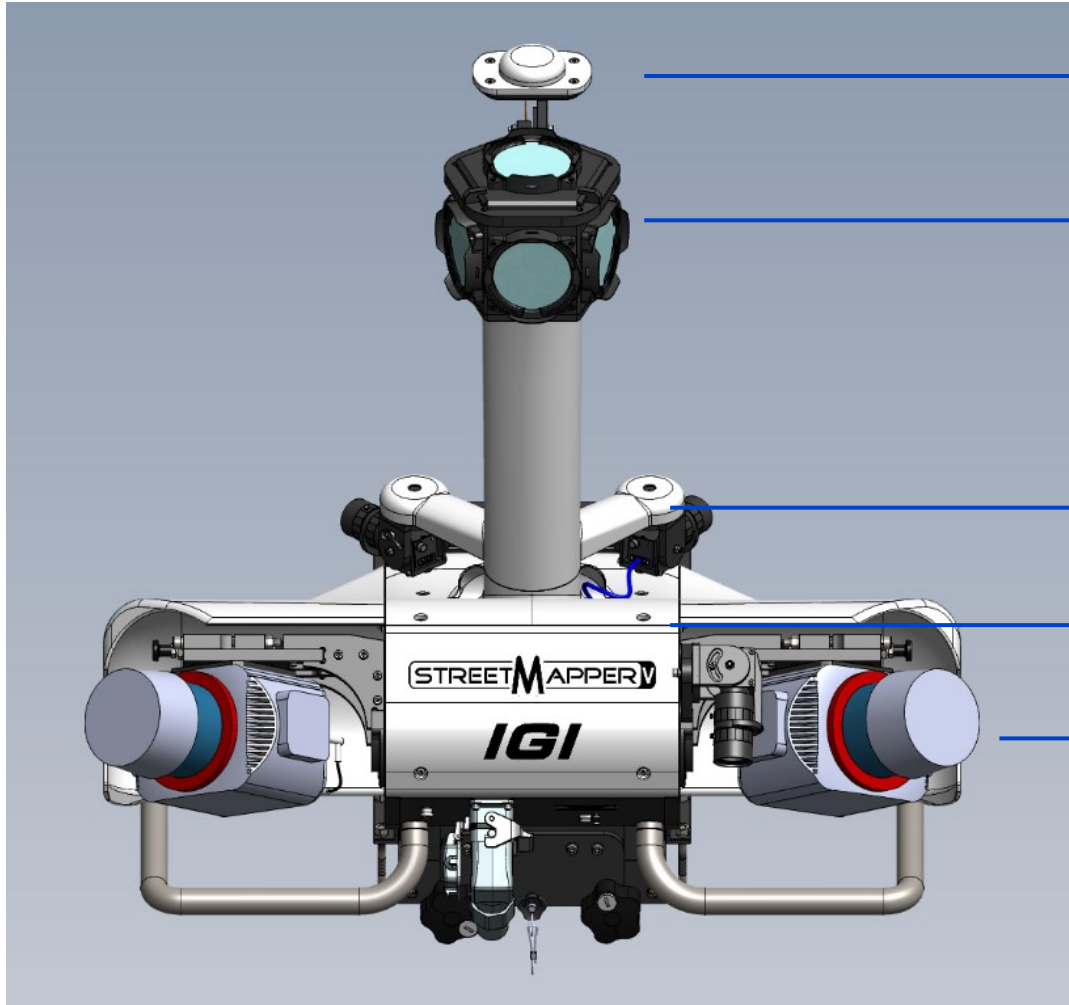
## **Spring 2024**

***StreetMapper V***  
***&***  
***Airborne Systems***

# STREET **M**APPER<sup>®</sup>

**the worlds most accurate  
mobile mapping system**

# STREETMAPPER V



certified multiband antenna

high resolution panorama camera

mount for optional cameras

high precision INS system (inside)

high accuracy kinematic LIDAR  
(mounting position adjustable)

## INS-system



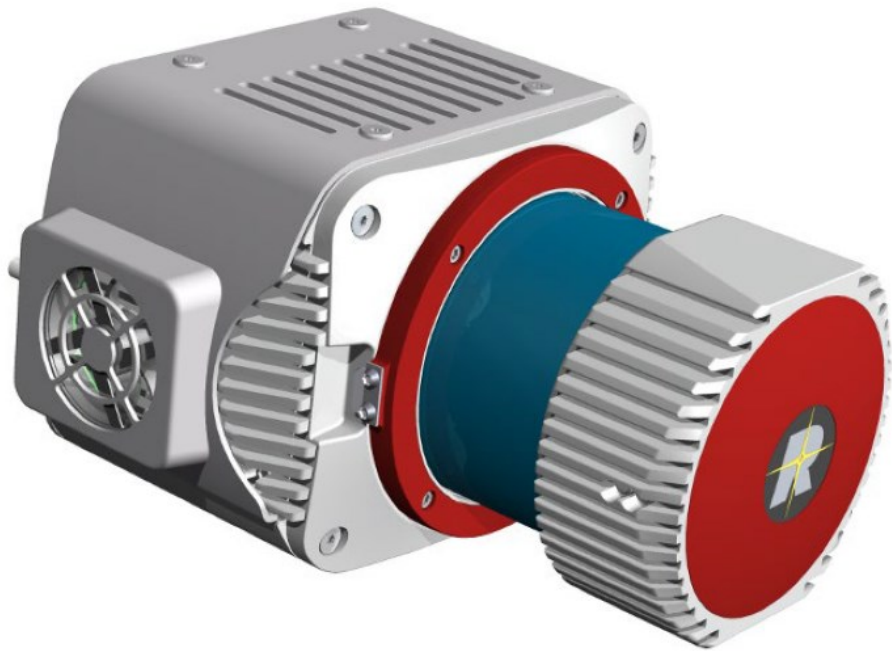
- GNSS receiver:** 544 channels  
GPS, GLONASS, GALILEO, etc.
- Communication:** dual antenna configuration  
Fast Ethernet LAN, RS232  
PPS Output, 3x Event input
- IGI AEROoffice software | web interface**
- Export free:** no BAFA,  
no ITAR restrictions

## Panorama camera: LadyBug6



<b>Resolution:</b>	12,288 x 6,144 (72 MP)
<b>Max Frame Rate:</b>	15 FPS JPEG (72 MP) 29.9 FPS JPEG (36 MP)
<b>Exposure Range:</b>	0.02 ms to 2 seconds
<b>Operating Temp.:</b>	-30° to 50°C

## Scanner: VUX-1HA-22



**Precision:**

3 mm

**Measurement Rate:**

up to 1,800,000 meas./sec

**Scan Speed:**

up to 250 scans/sec

**Operating Temp.:**

-20° to 40°C

Laser Pulse Repetition Rate PRR <sup>1) 2)</sup>	300 kHz	500 kHz	1000 kHz	1250 kHz	1500 kHz	1800 kHz
Max. Measuring Range <sup>3) 4)</sup>						
natural targets $\rho \geq 10\%$	170 m	130 m	85 m	85 m	85 m	85 m
natural targets $\rho \geq 80\%$	475 m	370 m	235 m	235 m	235 m	235 m
Max. Number of Targets per Pulse <sup>5)</sup>	15	15	9	7	5	4



*StreetMapper-V*

STREET **M**APPER®





# StreetMapper-V Operator Display

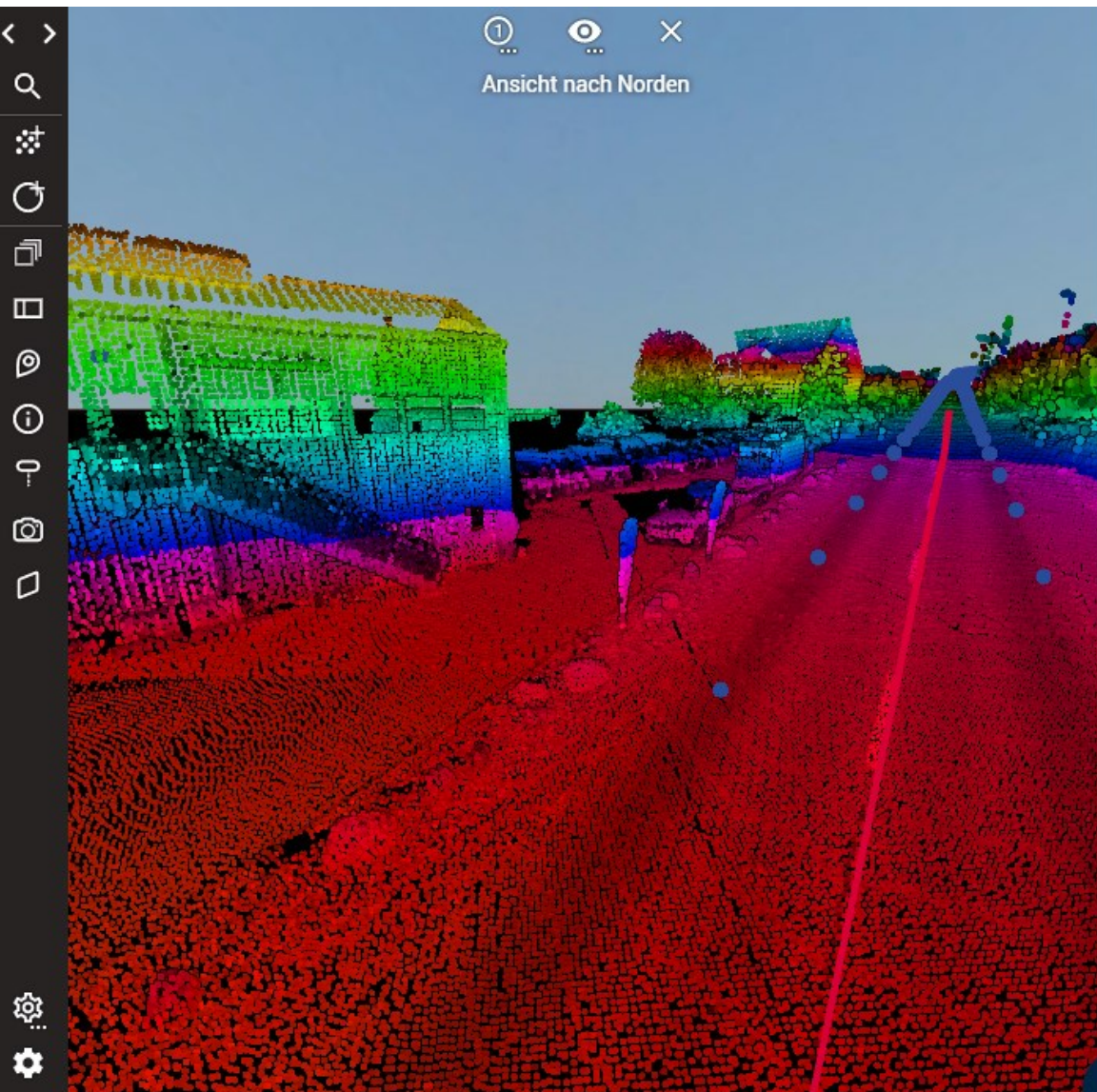
The display is divided into several functional areas:

- LIDAR Left:** SYNC, State: Ready, REC, PRR: 1000 Hz, Disc Usage: 2%, Auto Rec: On, File Interval: n/a.
- LIDAR Right:** SYNC, State: Ready, REC, PRR: 1000 Hz, Disc Usage: 1%, Auto Rec: On, File Interval: n/a.
- Distance Ctrl:** SENS, NAV, SYNC, Project: 5, Area: 1, Line: 2, Event Id: 2290, REC / EXP, Distance: 5, Speed: 55 km/h, FPS: 3.0, CF 02-0149.
- Map:** RevLog Map showing a street grid with colored overlays (yellow, red, blue) and a vehicle icon. Street names include Buhstraße, Wehrstraße, Gorch Fock Straße, and Lambarneweg.
- Map Controls:** Home, Pause, Time (0:12:00), Show last (h-m-s), 3D Map, DT Map, Vector, WUX Left, WUX Right.
- Map Data:** Center Lat: 50N50.6760, Center Long: 007E58.6065, Width Map: 567.8, Height Map: 288.8.
- DigiCAN RT12:** SYNC, Exp: 2290, EXP, Shutter: 1/8000, Read: 48187, Interval: 0.3, 2000.
- DigiCAN Ladybug:** SYNC, Exp: 2290, EXP, Shutter: 1/8000, Read: 149194, Interval: 0.3.
- Bottom Panel:** Home, A1, A2, Volume, Windows, IGI logo, and system icons (battery, signal, power).





# Online Panorama + LiDAR Data







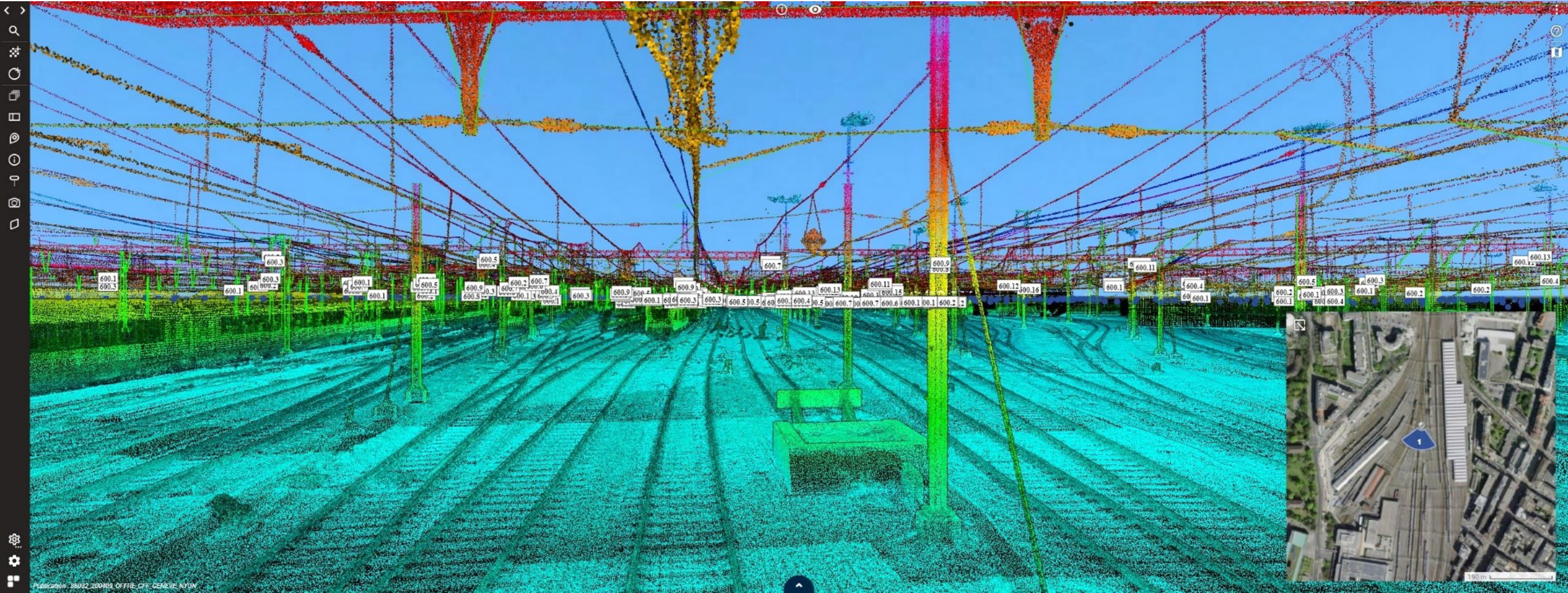






# Online Panorama + LiDAR Data

STREETMAPPER®



**StreetMapper-V** Demo Dataset available online - please contact – [sales@igi-systems.com](mailto:sales@igi-systems.com)



# *Navigation in the Absence of GNSS*



**Stuttgart Tram - Processed with *TERRAoffice v5.4***

**27 GCP – Every 150m -> Accuracy 2.2 cm**



# IGI StreetMapper-V

STREET **M**APPER®



- Highest Accuracy with *IGI TERRAcontrol*
- Dual Antenna Support
- Integrated laser scanners from Riegl
- Integrated Panoramic Camera, LB6
- Integrated 12/31MP Camera, *DigiCAM-RT*
- Integrated Thermal Camera, *DigiTHERM-640*



-> [sales@igi-systems.com](mailto:sales@igi-systems.com) <-

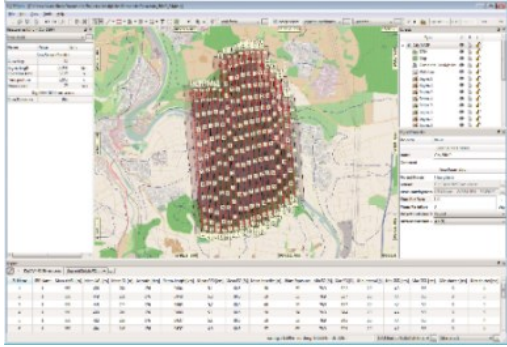




# ***IGI's Aerial Cameras***

# IGI's State Of The Art Aerial Camera & LiDAR Systems

Modular Design Lower Operating Costs + Endurance!



**IGIplan**



**AEROoffice, IPS, 3rd party**



**CCNS-5**



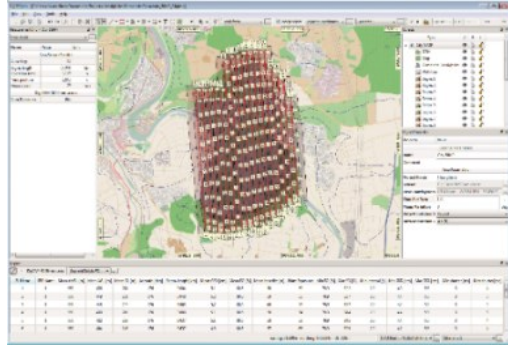
**AEROcontrol**



**SMU / IGIvisu**

# IGI's State Of The Art Aerial Camera & LiDAR Systems

Modular Design Lower Operating Costs + Endurance!



**IGIplan**



**AEROoffice, IPS, 3rd party**



**CCNS-5**



**AEROcontrol**



**SMU / IGIvisu**

# DigiCAM-100 & 150

100 or 150 Mpixel CMOS

Image repetition: 0.5 sec

Dynamic Range: 84 db

Exposure Time: 1/2500 sec

High endurance shutter with

> 0.5 mio. cycles

IGI **SMU-2** with 4TB hotplug SSD  
space for more than 20,000 images





# IGI Large Format Aerial Camera System

*IGI DigiCAM-200*

## **IGI DigiCAM-300**

*IGI DigiCAM-450*

**RGBI 22,400 x 13,500 pixels**

**Lens Options: 70, 90, 150, 180mm**

Mount Support DSM-400 or larger





# Cessna 210



**IGI DigiCAM-300**



# *DigiCAM-450*

**90mm lens:**

**34.500 x 14.100 pixel RGBI**



# ***DigiCAM-450***

**180mm lens:**

**31.600 x 13.900 pixel RGBI**

**150mm available too**





# *DigiCAM-450*

**180mm lens:**

**31.600 x 13.900**

**pixel RGB(I)**



# ***IGI UrbanMapper & Penta-DigiCAM***

**2-IN-1**

**Large Format & Oblique  
Aerial Camera Solution**

# IGI Aerial Camera Systems



## *IGI Penta-DigiCAM (PDC-150)*

RGBI **14,400** x 13,500 pixels

**Lens Nadir: 50, 70, 90, 150mm**

**Lens Oblique: 80, 90, 110,  
150, 180mm**



## *IGI Penta-DigiCAM-280 (PDC-280)*

RGBI **20,150** x 14,118 pixels

(Shift Technology)

**Lens Nadir: 90mm**

**Lens Oblique: 90, 110mm**



## *IGI UrbanMapper-2P (UM-2P)*

RGBI **34,500** x 14,100 pixels

(Tilt Technology)

**Lens Nadir: 90, 150, 180mm**

**Lens Oblique: 90, 110, 150, 180mm**

# IGI Penta-DigiCAM-280





**IGI Penta-DigiCAM-280**







**IGI**  
**Penta-**  
**DigiCAM-280**





# IGI Penta-DigiCAM-280









# **IGI *UrbanMapper-2***

## ***PERFORMANCE***

**RGBI**

**34,500 x 14,100**





IGI UrbanMapper-2  
 150mm x 150/100 Mpixel  
 P/N:06290 S/N:02-0101  
 www.igi-systems.com  
 Made in Germany





# IGI *UrbanMapper-2* **PERFORMANCE**



*Possibility to select the lens of choice!*

Nadir: **90mm or 150mm or 180mm lens**

Oblique: **90mm or  
110mm or  
150mm or  
180mm**





# IGI *UrbanMapper-2* **PERFORMANCE**



*Unique possibility to select the lens of choice!*

Nadir: 90mm or 150mm or **180mm** lens

Oblique: 90mm or  
110mm or  
150mm or  
**180mm**





# Cessna 208 Caravan



**IGI UM-2P 180mm**





# IGI UrbanMapper - Acceptance for Public Projects



Bezirksregierung  
Köln



**Aerial Photo Flights NRW 2022 – RVR**  
Usage of IGI - Urban Mapper 2 by Aerowest GmbH

Dear Sir or Madam,

We refer to the order for the summer aerial photo flight, flight period 01.05. to 31.08.2022, which was awarded in cooperation with the Regionalverband Ruhr to the company Aerowest GmbH.

The images delivered by the IGI - UrbanMapper 2 have been fully and thus classified as suitable for production at Geobasis NRW. The AdV Product and Quality Standard for DOP Version 4.1 as of 05.06.2020 was adhered to. The TrueDOP product with a GSD of 10cm could be produced with low radiometric deviations.

Overall, the images of the IGI - UrbanMapper 2 are considered suitable for the products of the state survey of North Rhine-Westphalia, Germany.

gez.

i.A.

Michael Huppertz

Oberregierungsvermessungsrat

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53177 Bonn

Stadtbahnlinien 16 und 63  
bis Endhaltestelle  
Bad Godesberg, Stadthalle

Besuchstermine nur nach  
telefonischer Vereinbarung

Landeshauptkasse NRW:  
Landesbank Hessen-Thüringen  
IBAN:  
DE59 3005 0000 0001 6835 15  
BIC: WELADEDXXX  
Zahlungsavis bitte an  
zentralebuchungsstelle@  
brk.nrw.de

**Правительство округа  
Кёльн**

**Михаил Гупперц,  
Высший  
государственный  
геодезический совет**

# IGI UrbanMapper - Acceptance for Public Projects



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53177 Bonn

Stadtbahnlinien 16 und 63  
bis Endhaltestelle  
Bad Godesberg, Stadthalle

Besuchstermine nur nach  
telefonischer Vereinbarung

Landeshauptkasse NRW:  
Landesbank Hessen-Thüringen  
IBAN:  
DE59 3005 0000 0001 6835 15  
BIC: WELADEDXXX  
Zahlungsavis bitte an  
zentralebuchungsstelle@  
brk.nrw.de

Правительство округа  
Кёльн



Михаил Гупперц,  
Высший  
государственный  
геодезический совет



# IGI UrbanMapper - Acceptance for Public Projects



Область  
Schleswig-  
Holstein



Schleswig-Holstein  
Der echte Norden



Landesamt  
für Vermessung  
und Geoinformation  
Schleswig-Holstein

Государственное  
управление  
по геодезии  
и Геоинформация

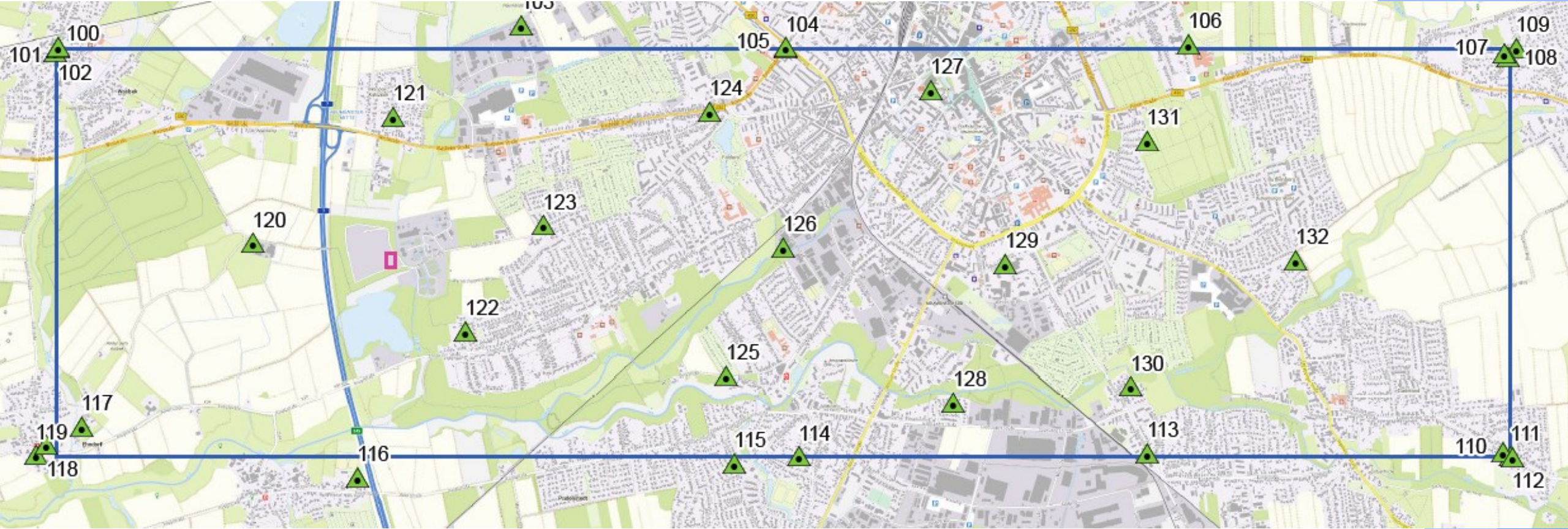


Participation in the  
“AdV Test on large format  
cameras 2023”

- Flying test flied 
- Data delivery 
- Now: waiting for results



# IGI UrbanMapper - Acceptance for Public Projects



**Test field with 33 GCPs and Control Points**



# *IGI UrbanMapper - Acceptance for Public Projects*





# Cessna 208 Caravan



**IGI UM-2P 180mm**





180mm 8cm GSD 3800m AGL





180mm 8cm GSD 3800m AGL





*180mm 8cm GSD 3800m AGL 100% zoom-in*





**180mm 6cm GSD 2850m AGL 100% zoom-in/**





**180mm 4cm GSD 1900m AGL - 100% zoom-in**





*180mm 2cm GSD 950m AGL 100% zoom-in*





*180mm 2cm GSD 950m AGL 100% zoom-in*





*180mm 2cm GSD 950m AGL 400% zoom*





*IGI UrbanMapper-2P 180mm*

 aerometrex





***IGI UrbanMapper-2P 180mm***

**Flying height 8000ft (~2440m) / GSD 5 cm**

**aerometrex**





# *IGI UrbanMapper-2P 180mm*

**Flying height 8000ft (~2440m) / GSD 5 cm**

 aerometrex

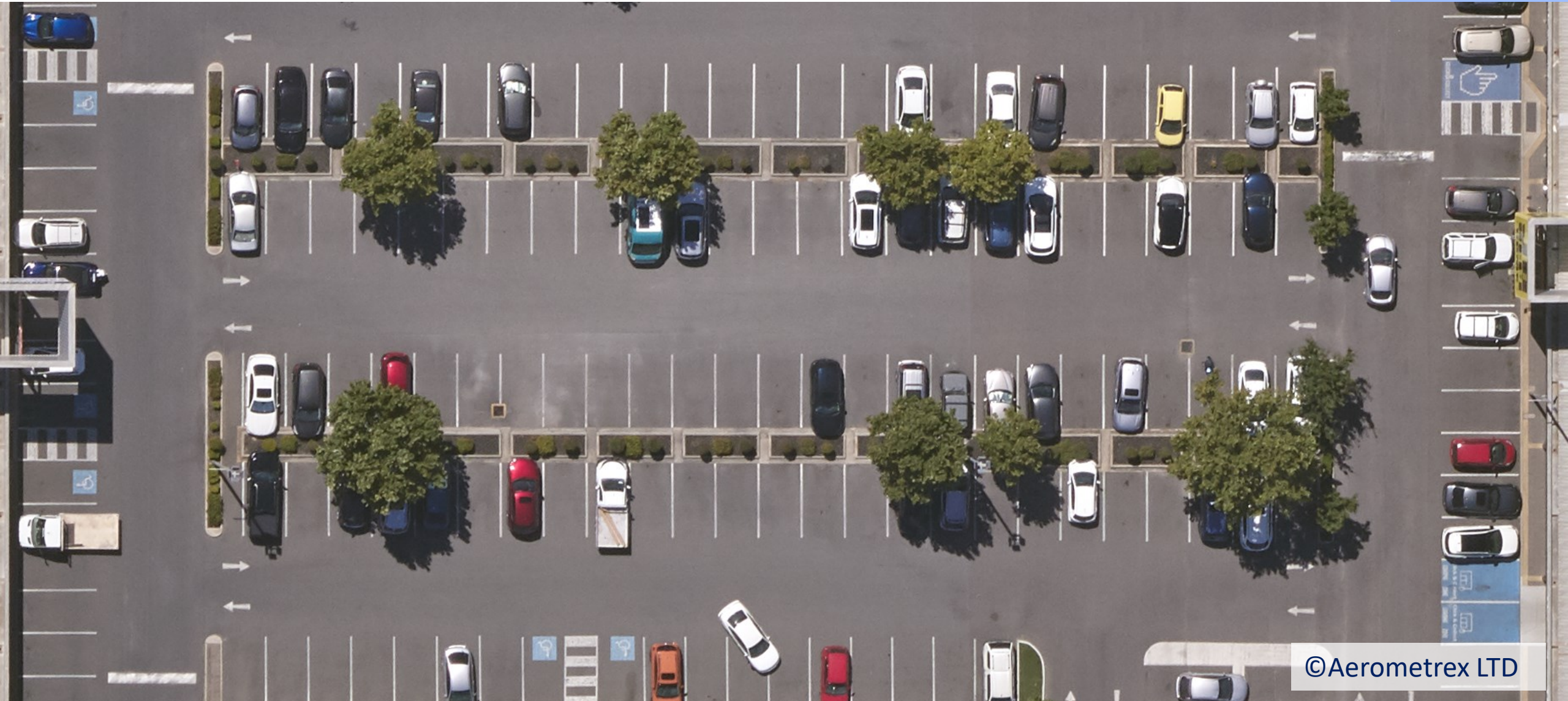




# IGI UrbanMapper-2P 180mm

Flying height 8000ft (~2440m) / GSD 5 cm

 aerometrex



©Aerometrex LTD



# IGI UrbanMapper-2P 180mm

Flying height 12000ft (~3660m) / GSD 7.7 cm

 aerometrex





# IGI UrbanMapper-2P 180mm

Flying height 12000ft (~3660m) / GSD 7.7 cm





# IGI UrbanMapper-2P





# IGI UrbanMapper-2P





# IGI UrbanMapper-2P





# IGI Aerial Camera Systems



**IGI**

number of camera heads	product	set-up	lens [mm]	number of variants
1	DigiCAM	1x RGB	24 – 300	24
2	DigiCAM	1x RGB, 1x NIR	24 – 300	24
2	Dual-DigiCAM-200 & 300	2x RGB	70, 80, 90, 150, 180	10
3	Dual-DigiCAM-200 & 300	2x RGB, 1x NIR	70, 80, 90, 150, 180	10
3	DigiCAM-450	3x RGB	90, 150, 180	3
4	DigiCAM-450	3x RGB, 1x NIR	90, 150, 180	3
5	Penta-DigiCAM	5x RGB	50, 70, 80, 90, 110, 150	11
6	Penta-DigiCAM	5x RGB 1x NIR	50, 70, 80, 90, 110, 150	11
6	Penta-DigiCAM-280	6x RGB	90, 110	1
7	Penta-DigiCAM-280	6x RGB 1x NIR	90, 110	1
7	UrbanMapper-2 Performance	7x RGB	90, 110, 150, 180	12
8	UrbanMapper-2 Performance	7x RGB 1x NIR	90, 110, 150, 180	12
			<b>SUM</b>	<b>123</b>





**Cessna 404**



***IGI UrbanMapper-2P***





→ GSD down to 1.5 cm from manned aircraft!

→ Reduce your mission time by 40%! *IGI UrbanMapper-2P*



**IGI**

**AEROWEST**  
Geodata On Demand





→ GSD down to 1.5 cm from manned aircraft!

→ Reduce your mission time by 40%! *IGI UrbanMapper-2P*



**IGI**

**AEROWEST**  
Geodata On Demand





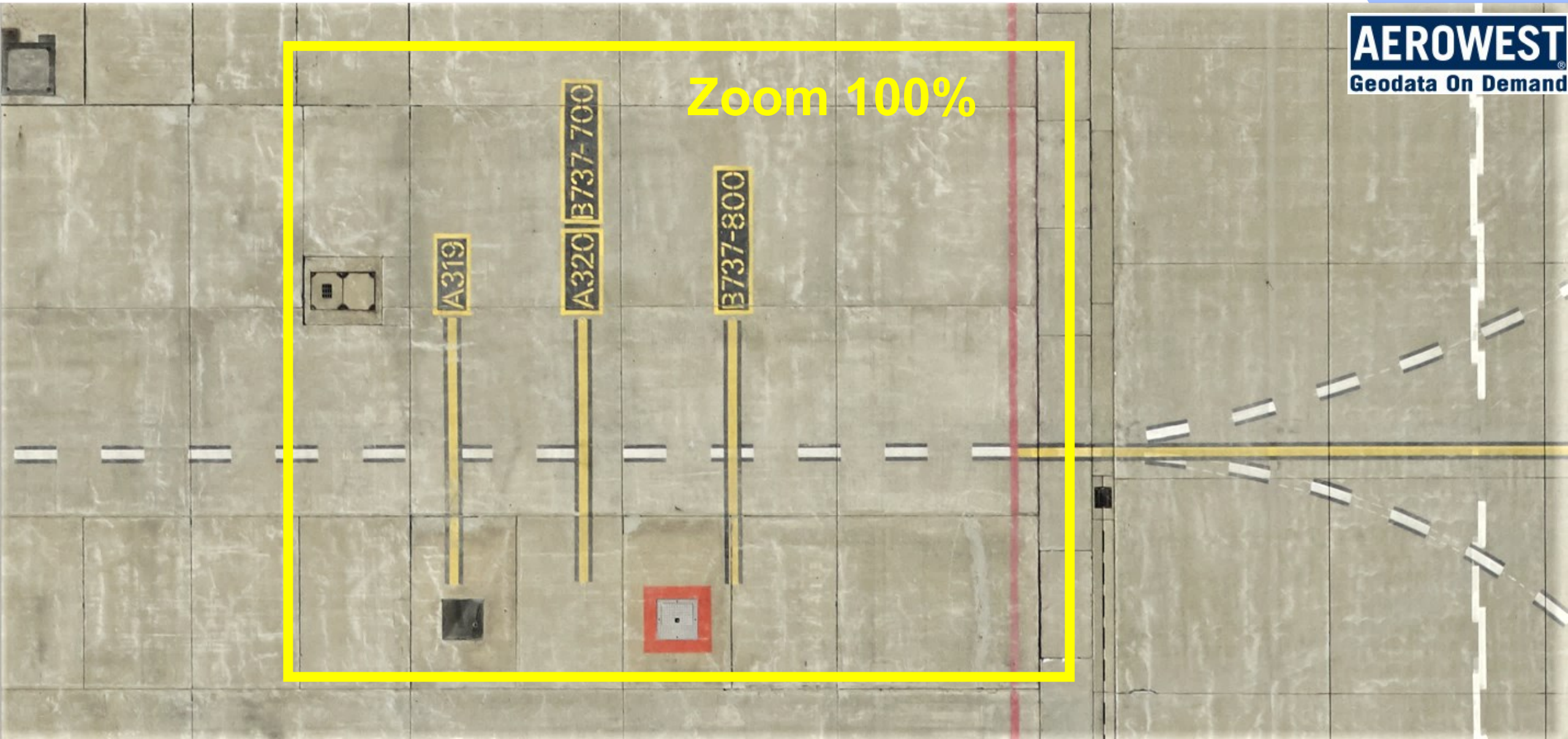
→ GSD down to 1.5 cm from manned aircraft!

→ Reduce your mission time by 40%! IGI UrbanMapper-2P



**IGI**

**AEROWEST**  
Geodata On Demand



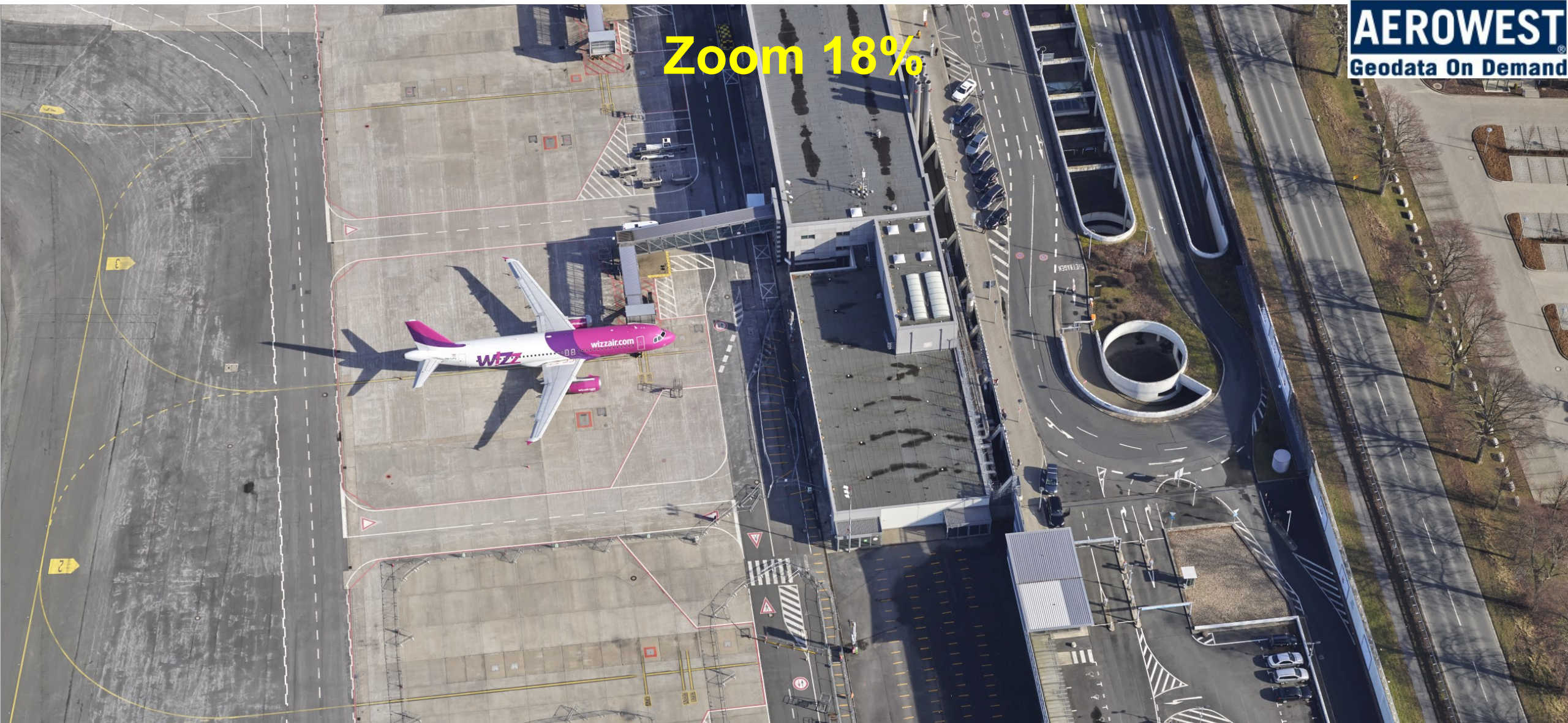


- GSD down to 1.5 cm from manned aircraft!
- Reduce your mission time by 40%! IGI UrbanMapper-2P



**IGI**

**AEROWEST**  
Geodata On Demand





→ GSD down to 1.5 cm from manned aircraft!

→ Reduce your mission time by 40%! IGI UrbanMapper-2P



**IGI**

**AEROWEST**  
Geodata On Demand

Zoom 50%





→ GSD down to 1.5 cm from manned aircraft!

→ Reduce your mission time by 40%! *IGI UrbanMapper-2P*



**IGI**

**AEROWEST**  
Geodata On Demand

Zoom 100%

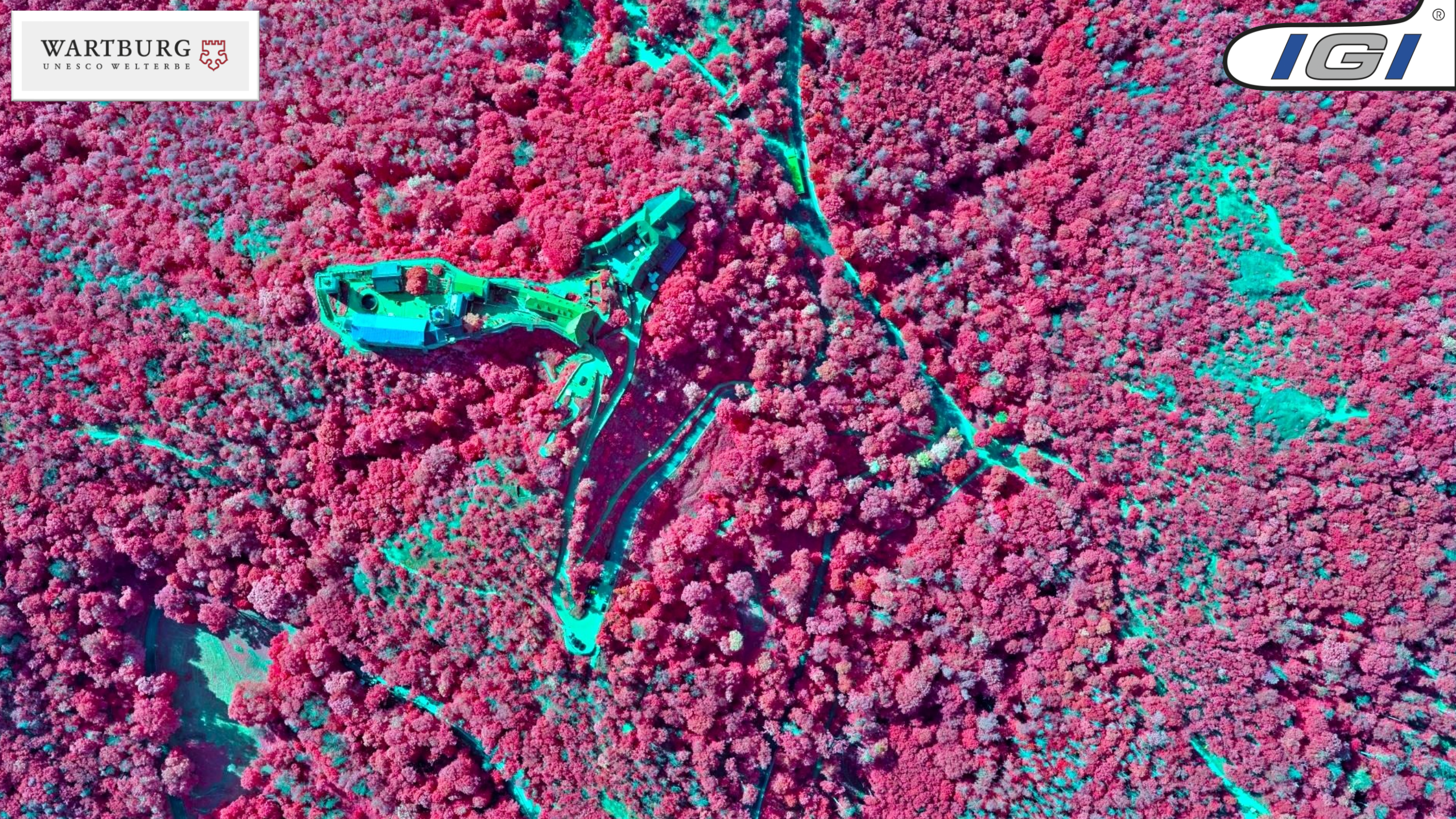








WARTBURG  
UNESCO WELTERBE

















# IGI UM-2, 150mm Example: „Münster“



www.igi-systems.com



h= 800m GSD=2cm

Demo Data Available On Request



# IGI UM-2, 150mm Example: „Münster“



h= 800m GSD=2cm Zoom=100%

Demo Data Available On Request







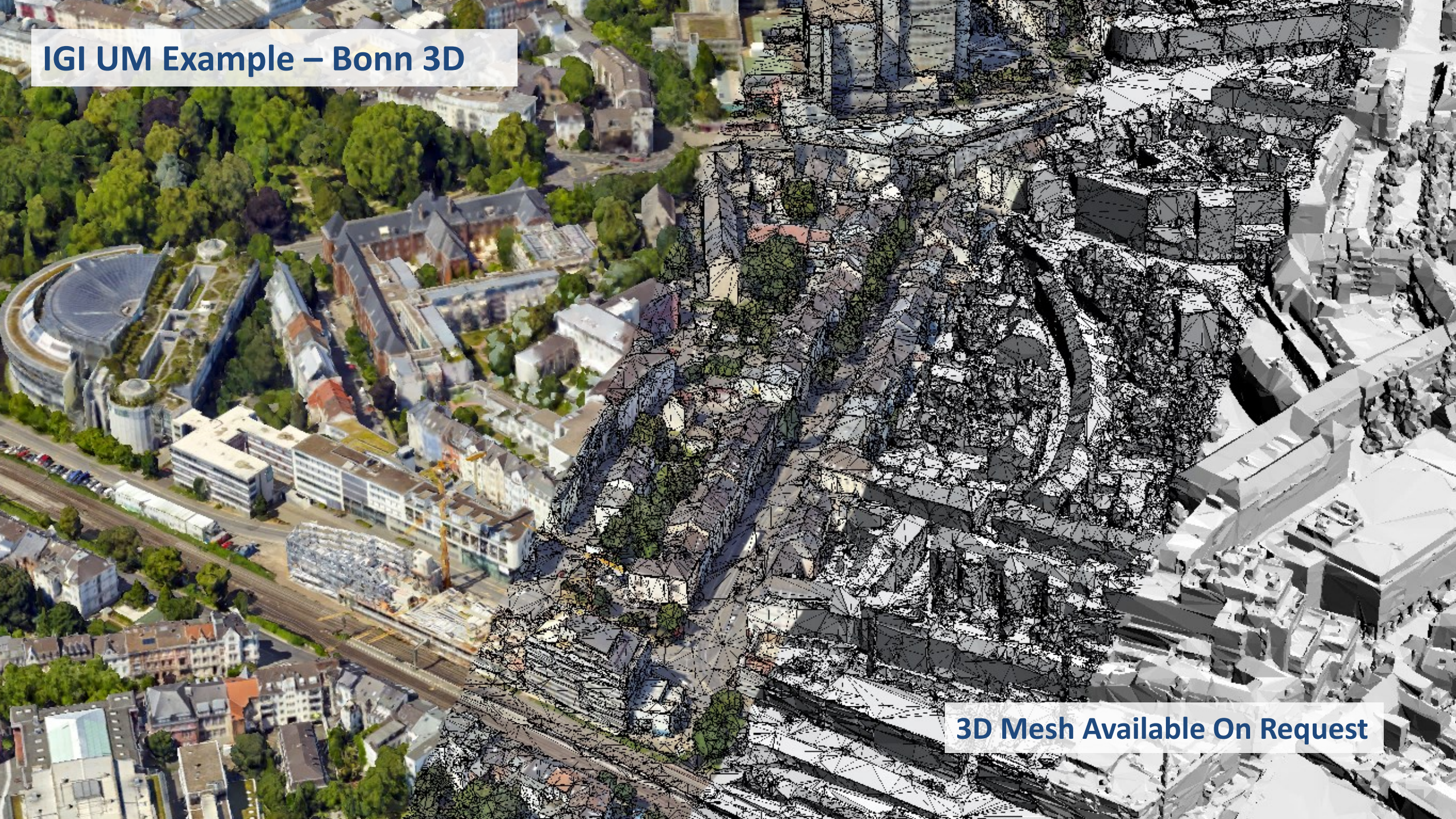


**IGI UM Example – Stuttgart 3D**

**3D Mesh Available On Request**



# IGI UM Example – Bonn 3D



3D Mesh Available On Request







# Cessna 208 Caravan



***IGI UrbanMapper  
+ LiteMapper-7802S***



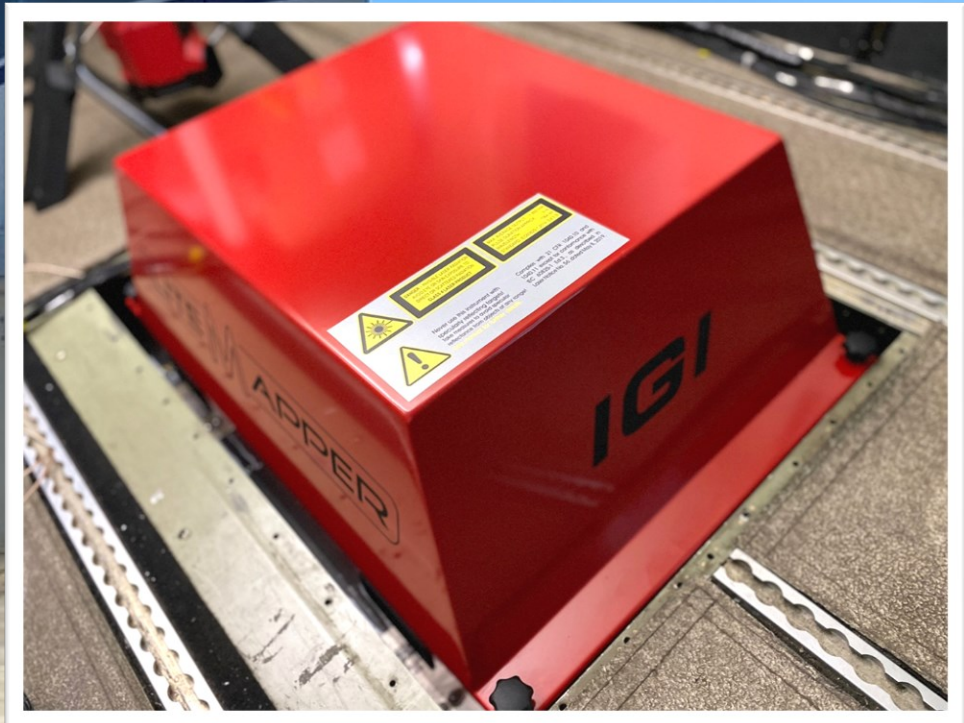


# Cessna 208 Caravan

SAMAH

HL5116

**IGI UrbanMapper  
+ LiteMapper-7802S**





# Cessna 208 Caravan



**IGI UrbanMapper-2P  
+ LiteMapper-7802S**





# Cessna 208 Caravan



**IGI UrbanMapper-2P  
+ LiteMapper-7802S**









# Trend



## Multi-sensor systems in one aircraft

### High Power Laserscanner & efficient multi-head camera system

SigmaMetrix, RF:	LiteMapper-7800-II	+ UrbanMapper-2	Tecnam
Kavel-10, Netherlands:	LiteMapper-5800	+ Penta-DigiCAM-280	Tecnam
Seahan, Korea:	LiteMapper-7800-II-S	+ UrbanMapper-2P	Cessna Caravan
SamAh, Korea:	LiteMapper-7800-II-S	+ UrbanMapper-1	Cessna Caravan
African-Surveyors, SA:	LiteMapper-7800-II-S	+ DigiCAM-300	Cessna 210



# Cessna 210



**IGI DigiCAM-300**



# Large Format Aerial Camera + Airborne LiDAR System



**LITE M APPER<sup>®</sup>**

***IGI DigiCAM-300 +  
LiteMapper-7800-II-S***



# Large Format Aerial Camera + Airborne LiDAR System



***IGI DigiCAM-300 +  
LiteMapper-7800-II-S***



# Multisensor system





# Multi-sensor system



***IGI DigiCAM-150 RGB***

***DigiCAM-100 NIR***



***LiteMapper-7800-II-S***

***Hyperspectral Specim AisaKESTREL 10***



# NEW: Helicopter Pod



	<b>DANGER - POSSIBLE LASER RADIATION</b> AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION. CLASS II LASER PRODUCT	<b>MAX AVERAGE OUTPUT - 100 mW</b> <b>PULSE DURATION APPROX. - 3 ns</b> <b>WAVELENGTH - 1064 nm</b> <b>STANDARD - IEC60825-1:2014 (Ed.2.1)</b>
	Never use this instrument with specularly reflecting targets! Take measures to avoid specular reflection from objects at any range!	Complies with: 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed.3., as described in Laser Notice No. 56, dated May 8, 2019.



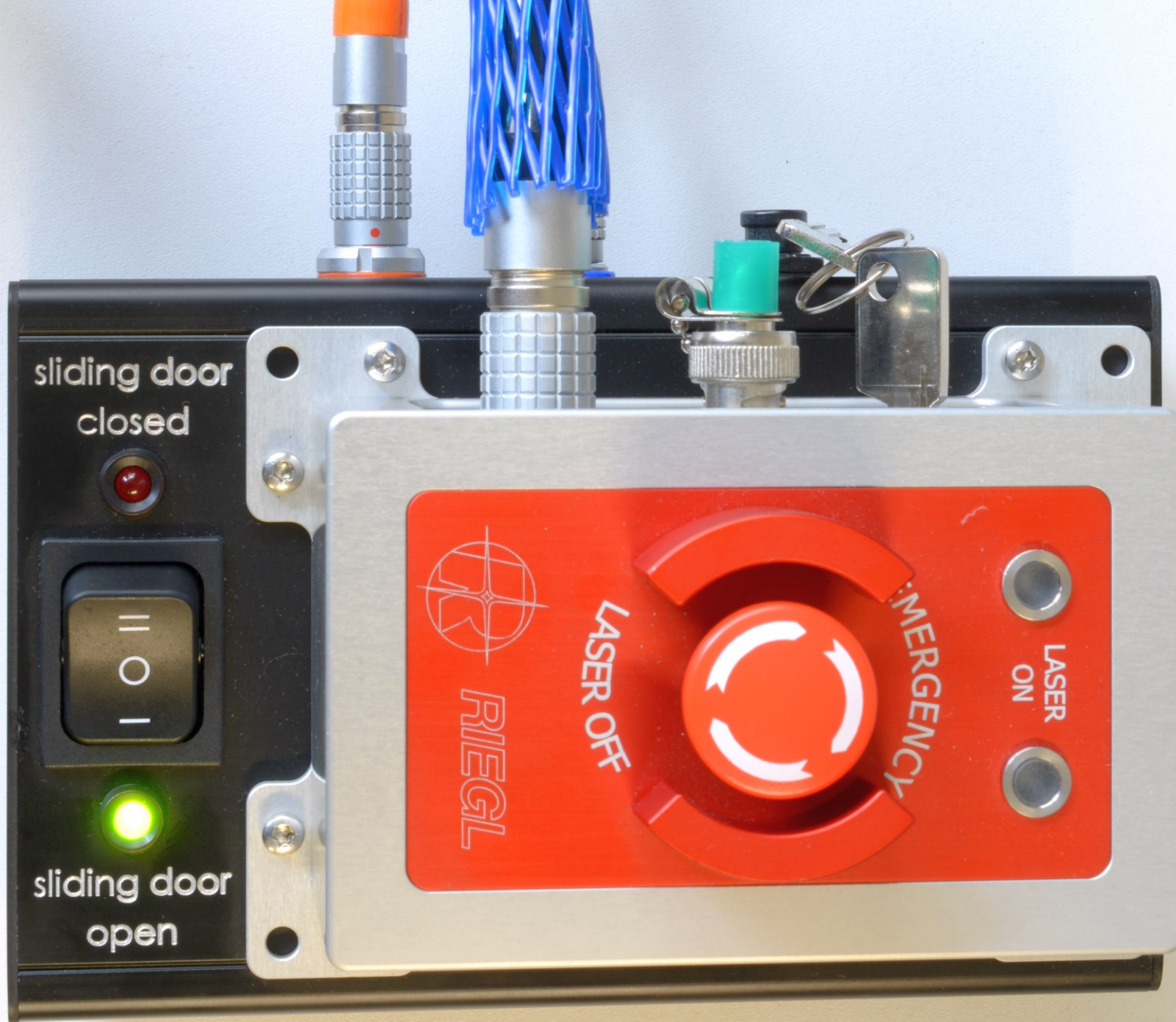
# **NEW:** *Helicopter Pod*





*Special  
feature:*

*Slide Door*





# Special feature: Slide Door



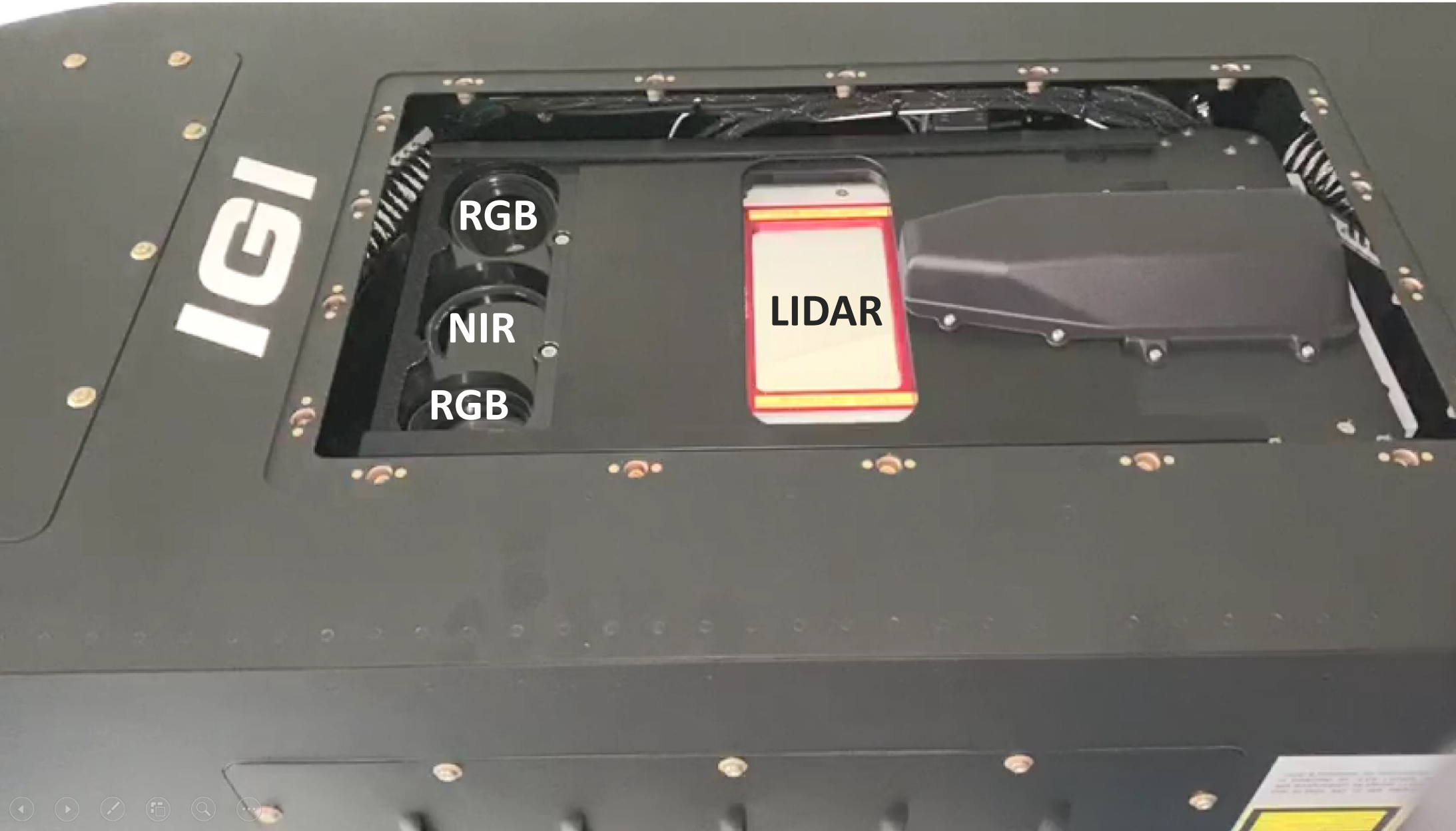


# ***IGI LiteMapper-7800 & DigiCAM-300***





# *IGI LiteMapper-7800 & DigiCAM-300*





# ***IGI LiteMapper-2400, VUX scanner***



***for Gyrocopter and UAV use***



***IGI LiteMapper-2400, VUX scanner***



***for Gyrocopter and UAV use***



***IGI LiteMapper-2400, VUX scanner***



***for Gyrocopter and UAV use***



# IGI LiteMapper-2400, VUX scanner



*for Gyrocopter and UAV use*



# Cessna 208 Caravan

***IGI DigiCAM-100  
+ LiteMapper-1560***





# Diamond DA-62 MPP



***IGI UrbanMapper-2P  
+ LiteMapper-7802S***



LITE M APPER<sup>®</sup>



Mi-8  
LiteMapper  
DigiCAM





# IGI Aerial Camera Systems: Medium to Large-format + 2-IN-1

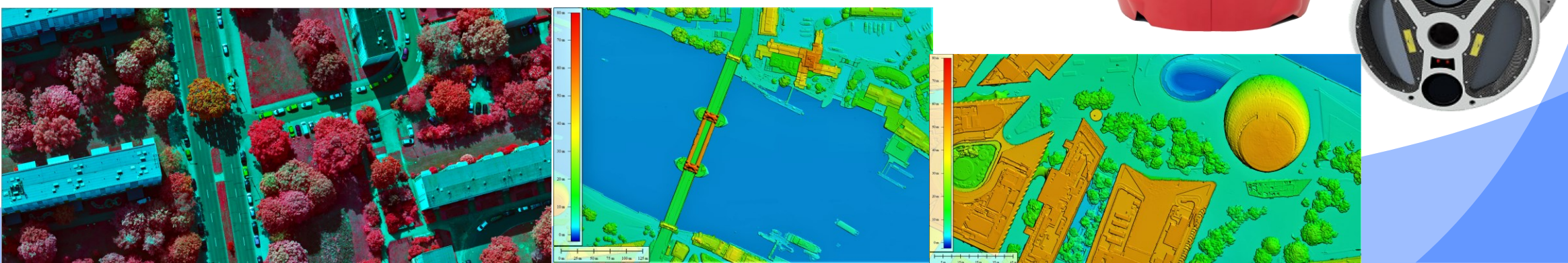


Medium-Format

Large-Format

2-IN-1 Systems

Integrated Systems





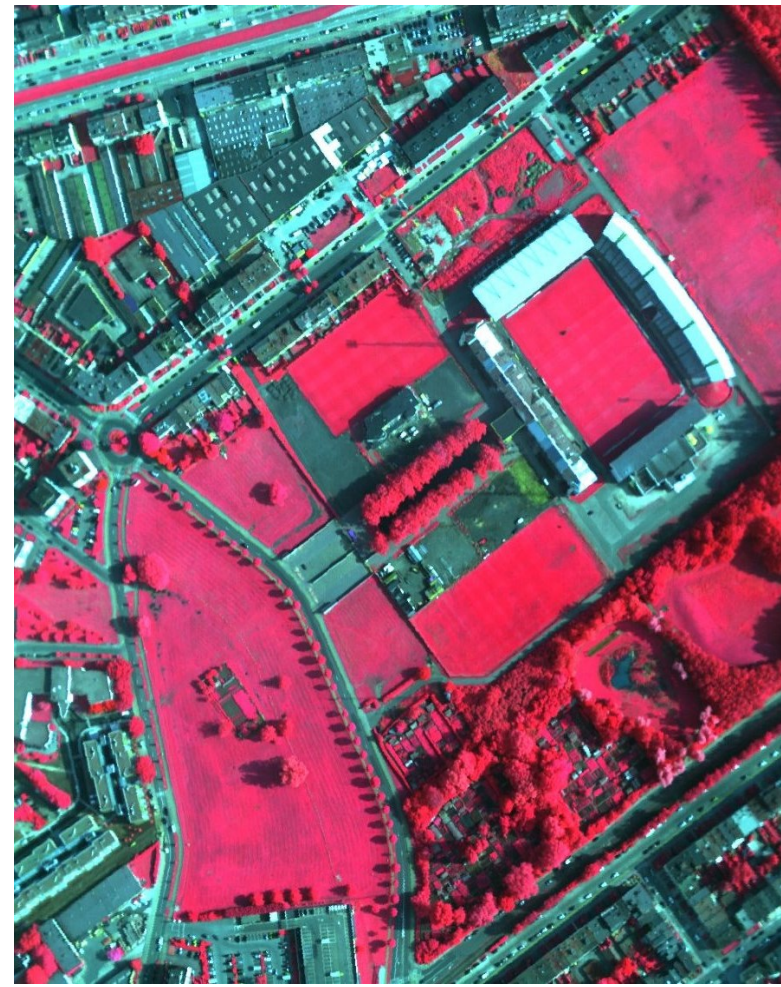
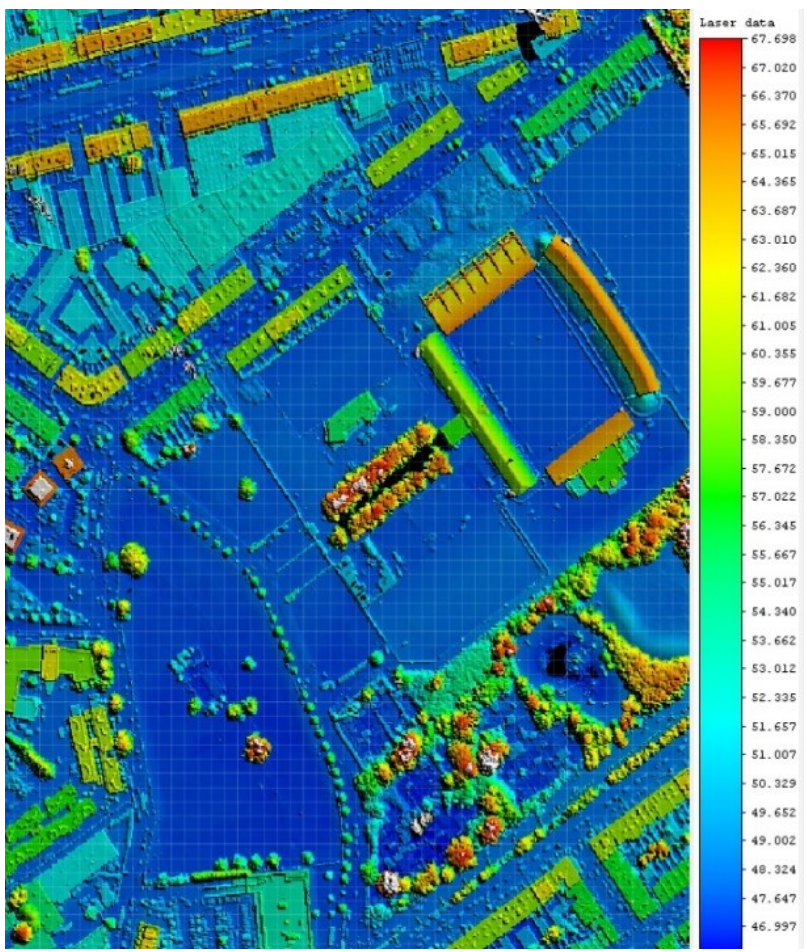


**IGI**

Laser

NIR

RGB







**Lastest IGI project  
unveiling at 2024 GMA  
conference, Moscow**



# IGI *EcoMapper*



**New  
2024**



# IGI EcoMapper

## 5 bands

- red
- green
- blue
- near infrared (NIR)
- Infrared (IR) temperature measurement



New  
2024



# ***IGI EcoMapper***

## **Three Camera Modules**

**1) Thermal**

**2) RGB**

**3) NIR**





# *IGI EcoMapper*

**thermal 3 Mpixel 1920 x 1536 IR pixel**

**RGB 150 or 100 Mpixel**

**NIR 150 or 100 Mpixel**

*IGI EcoMapper-1920 50mm*

*IGI DC-100 RGB 90mm | NIR 70mm*

*P/N: 07070 S/N: 42-0101*

*www.igi-systems.com*

*Made in Germany*



# ***NEW: EcoMapper***

- Perfect for thermal mapping of larger areas
- Fits in standard stabilized mount
- First flight: 12. Feb. 2024
- First commercial projects in progress





# IGI EcoMapper

Fly days & night

## Applications:

- True- Orthophoto, Cadaster
- Light Cadaster
- Heat loss measurements
- City Heating, heat maps





*„Light Cadaster“ „Свет кадастр“*

*Othophoto mosaic  
with  
day & night images*

*= new layer of  
geo-data (#1)*











A large multi-panel display on the right side of the dashboard, showing multiple data panels and controls. The display is illuminated with a blue and white glow.

**Top Panel:** SYNC, 202, ESP, PROFILE, OFFLINE, 99, 6.5, 77.2

**Bottom Panel:** SYNC, 202, ESP, PROFILE, OFFLINE, 99, 6.5, 77.2

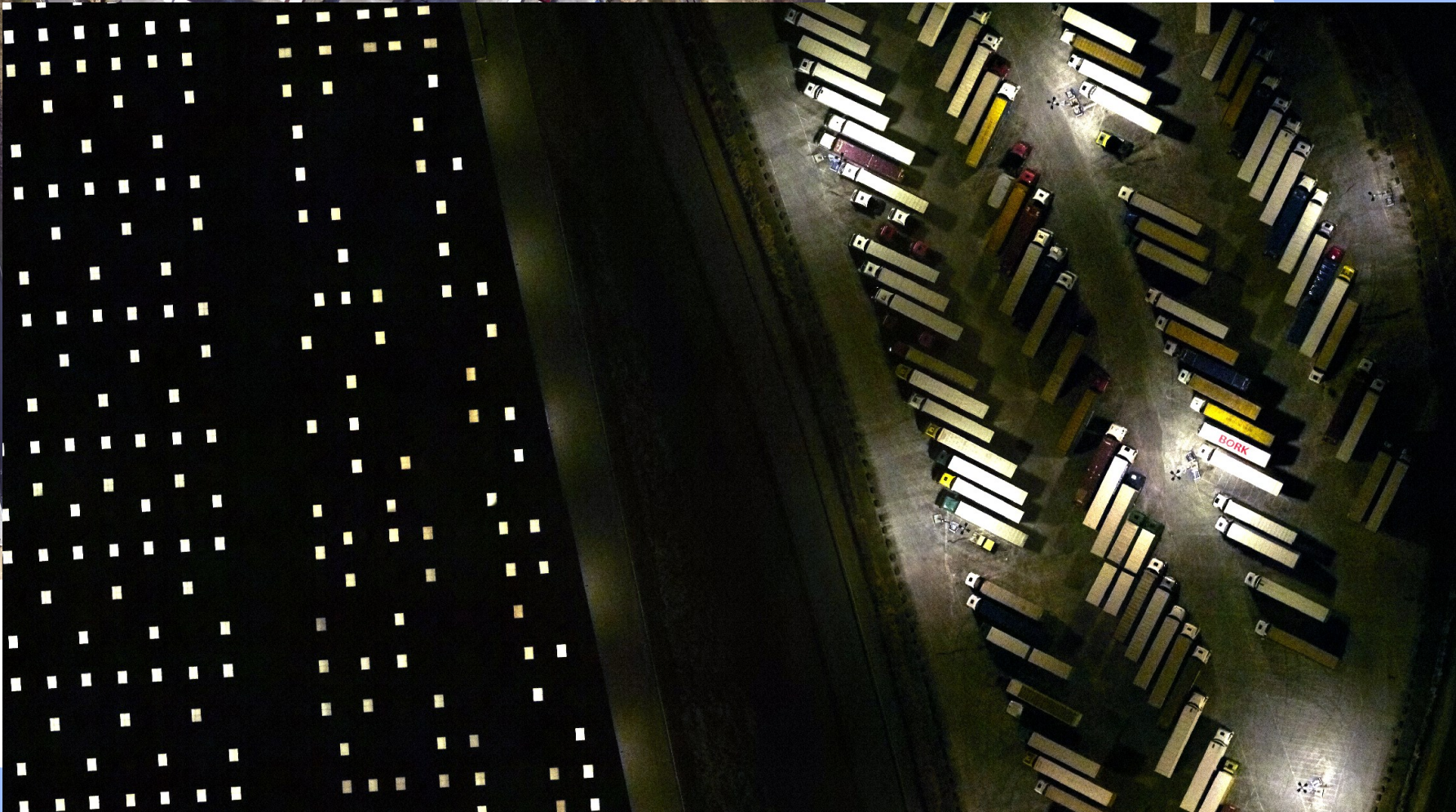
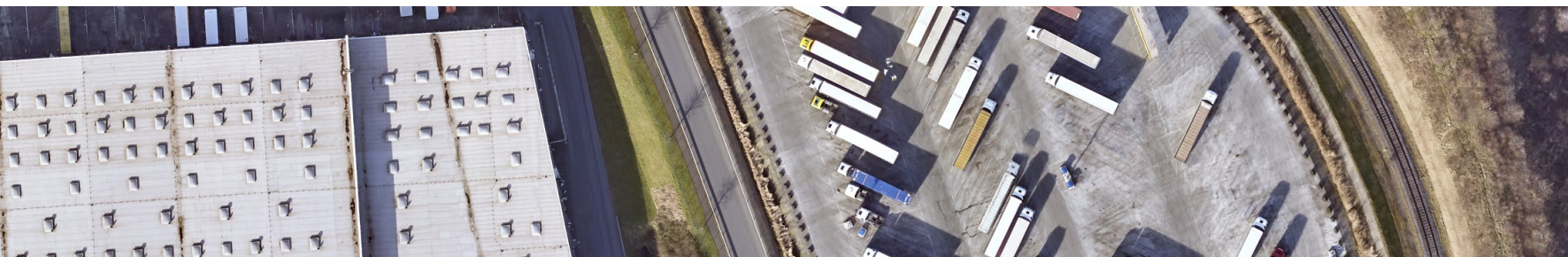
**Right Side Controls:** Home, Back, Forward, Stop, Refresh, Home, Back, Forward, Stop, Refresh





„Light Cadaster“

# New layer of Information #1



**AEROWEST**  
Geodata On Demand



# New layer of Information #2





***IGI DigiTHERM***  
***Nadir / cooled***

**Flying height**  
**3300ft (~1000m) AGL**  
**GSD 20 cm**





***IGI DigiTHERM***  
***Nadir / cooled***

**Flying height**  
**3300ft (~1000m) AGL**  
**GSD 20 cm**





***IGI DigiTHERM***  
***Nadir / cooled***

**Flying height**  
**3300ft (~1000m) AGL**  
**GSD 20 cm**





***IGI DigiTHERM***  
***Nadir / cooled***

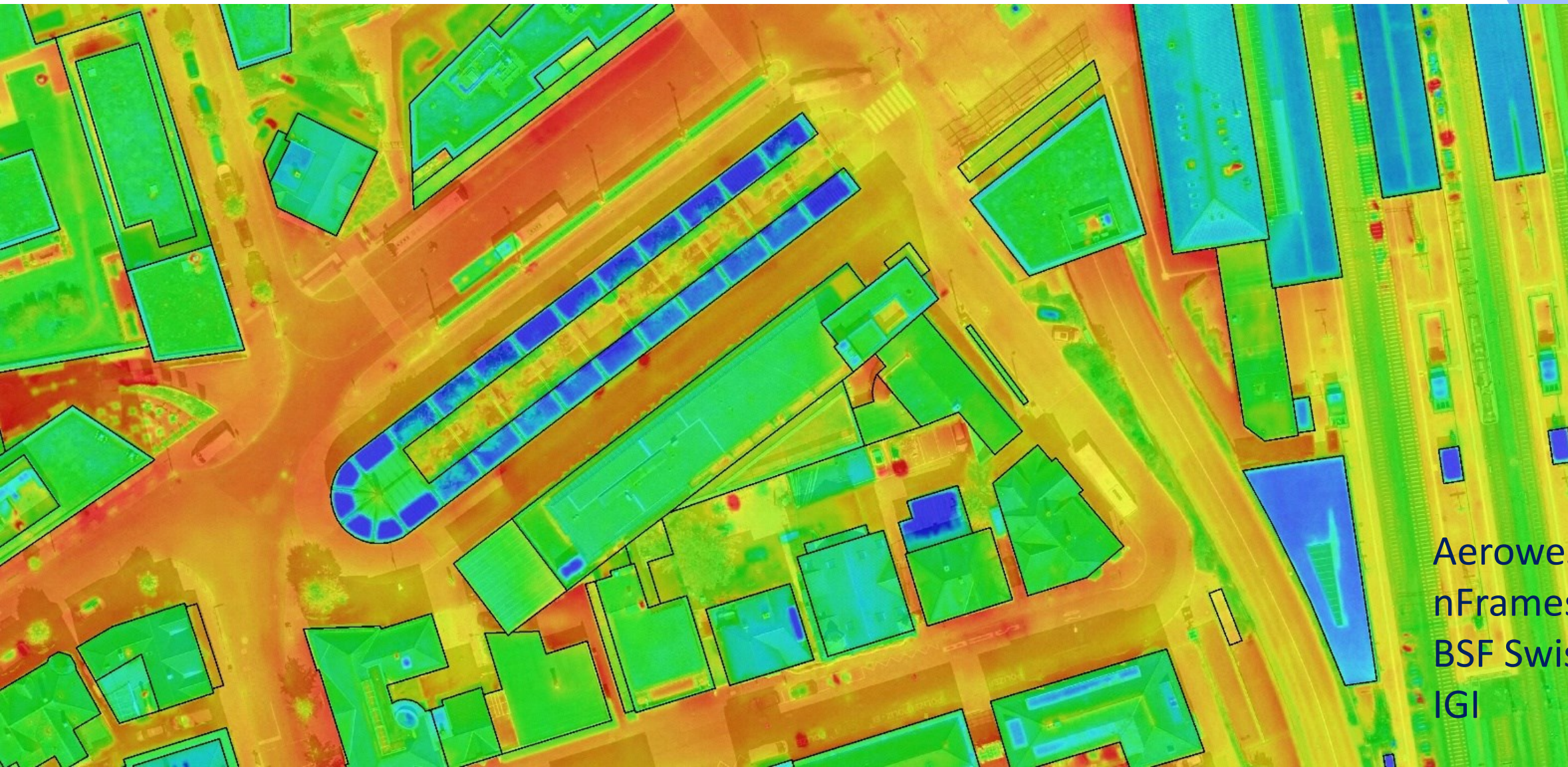
**Flying height**  
**3300ft (~1000m) AGL**  
**GSD 20 cm**





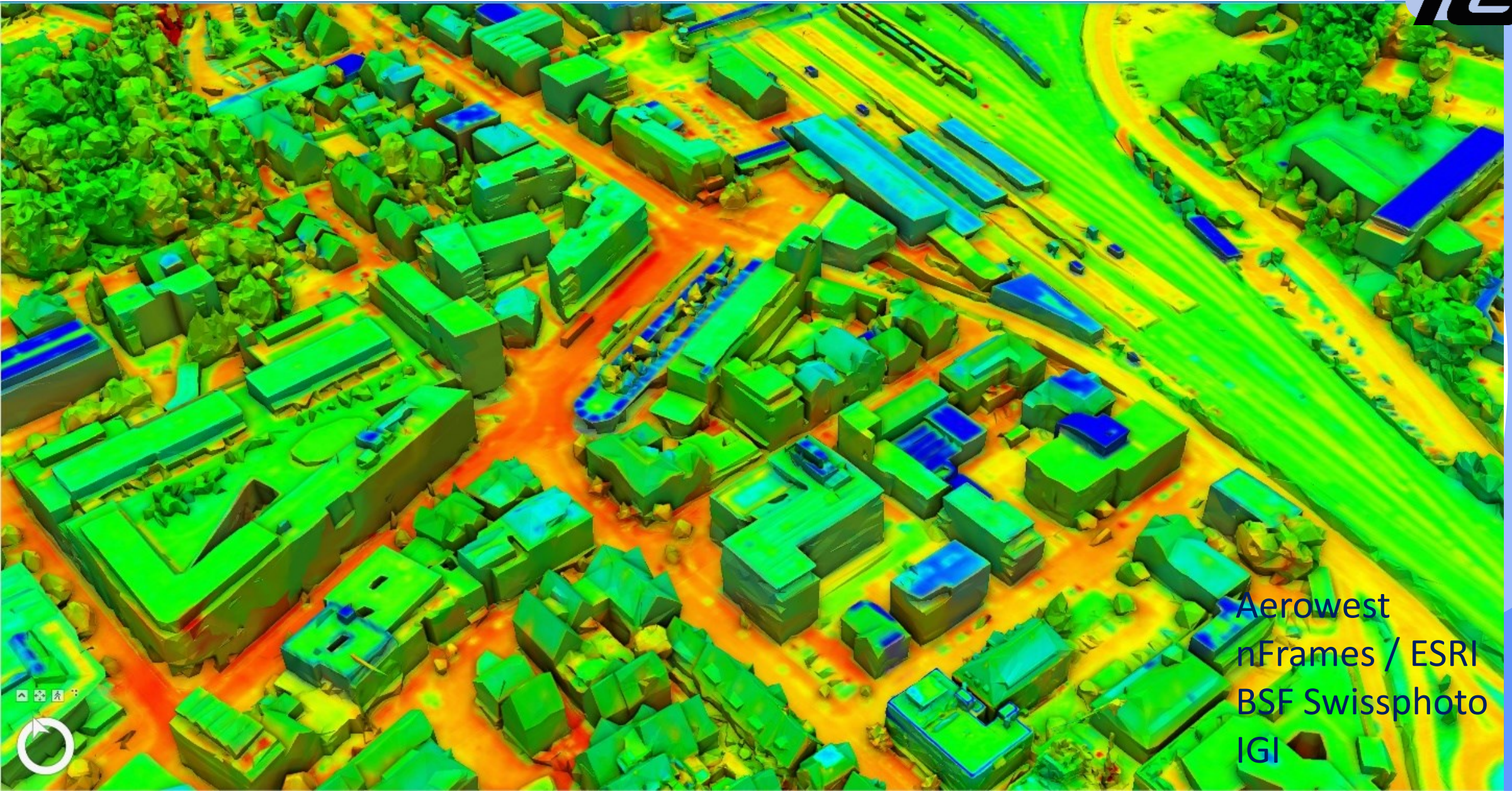
# IGI EcoMapper

Color coded thermal/optical ortho-image



Aerowest  
nFrames / ESRI  
BSF Swissphoto  
IGI





Aerowest  
nFrames / ESRI  
BSF Swissphoto  
IGI





# IGI EcoMapper – RGBI & TIR in 3D

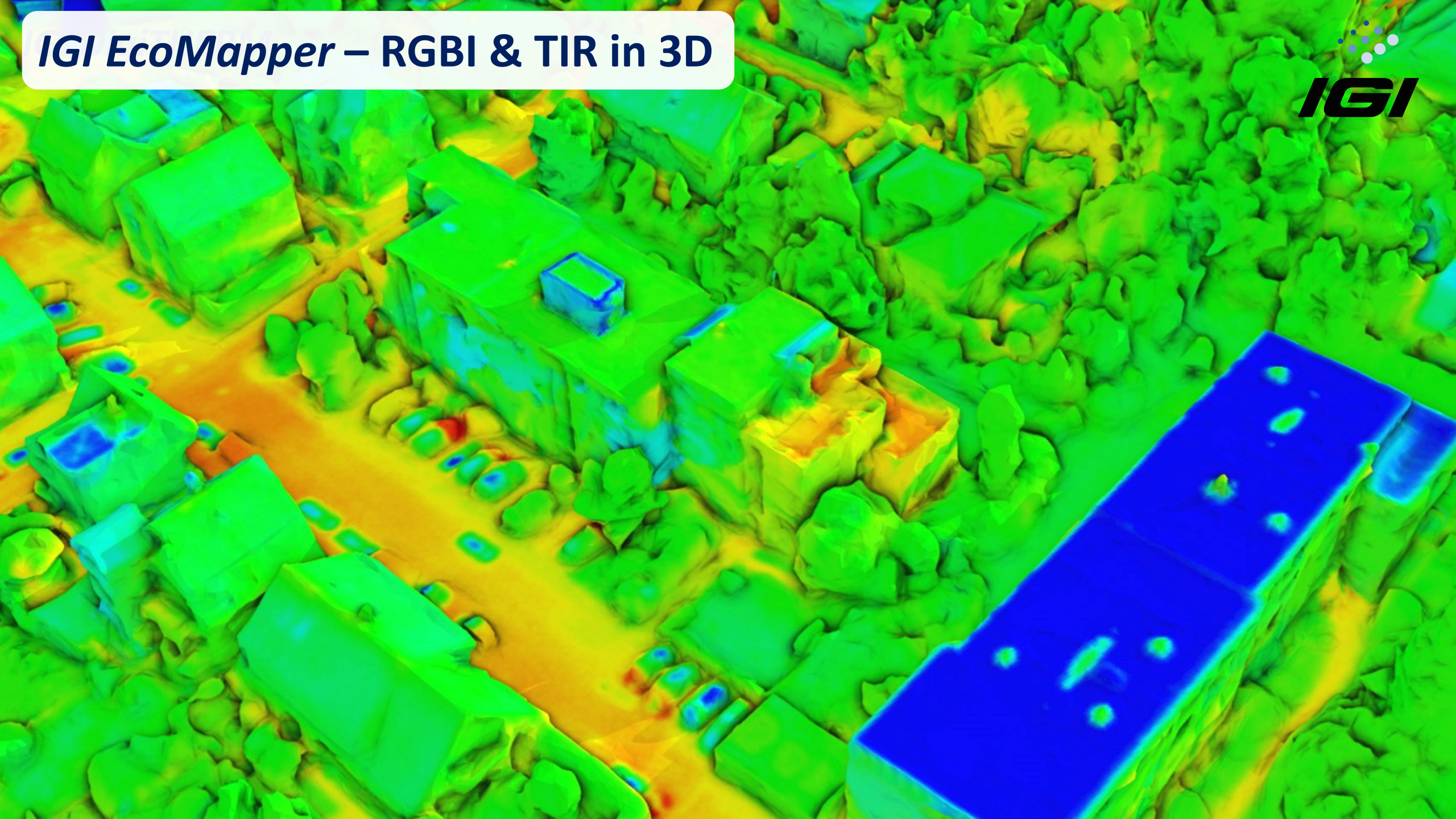




# IGI EcoMapper – RGBI & TIR in 3D



**IGI**

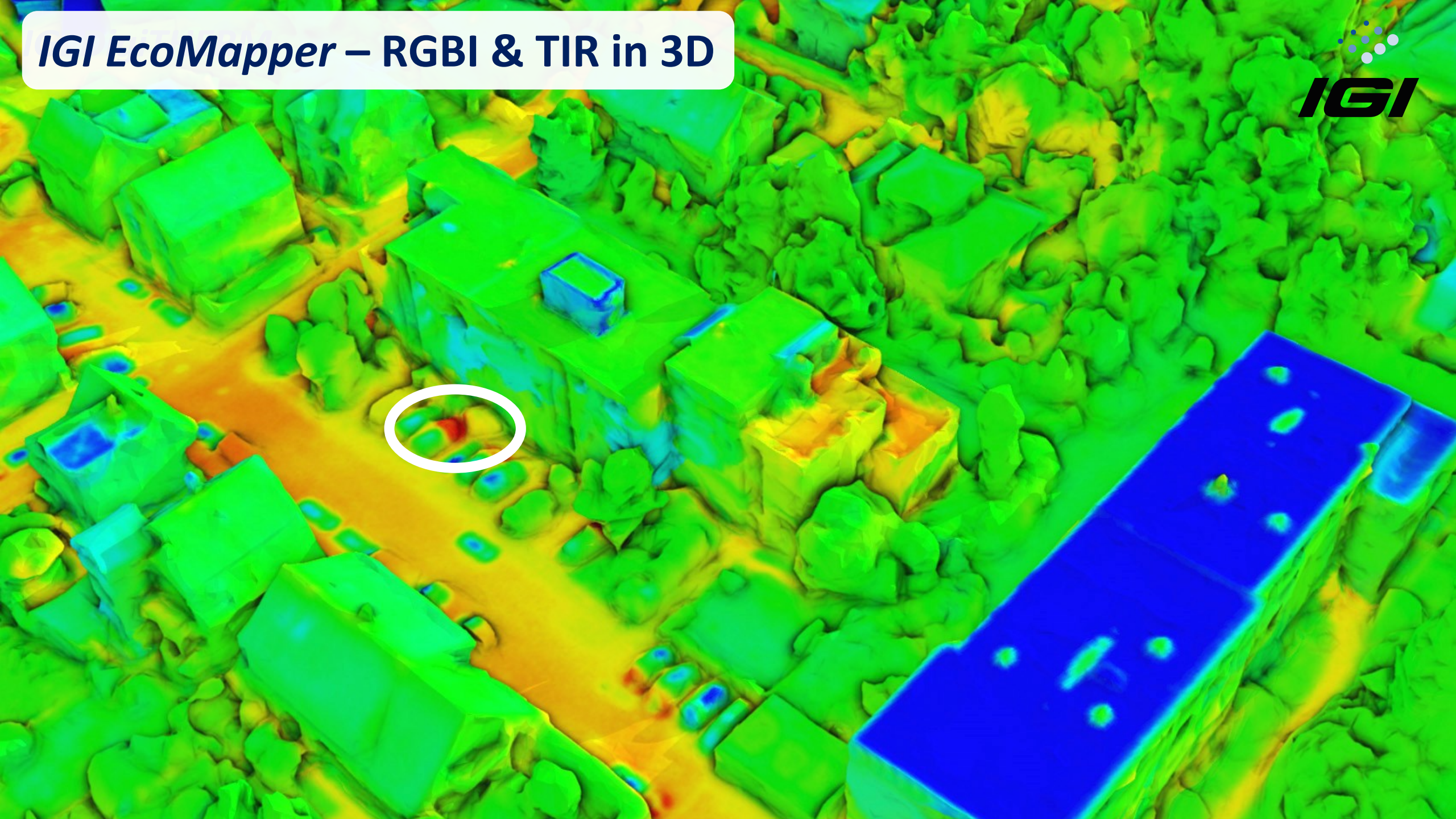




# IGI EcoMapper – RGBI & TIR in 3D



**IGI**

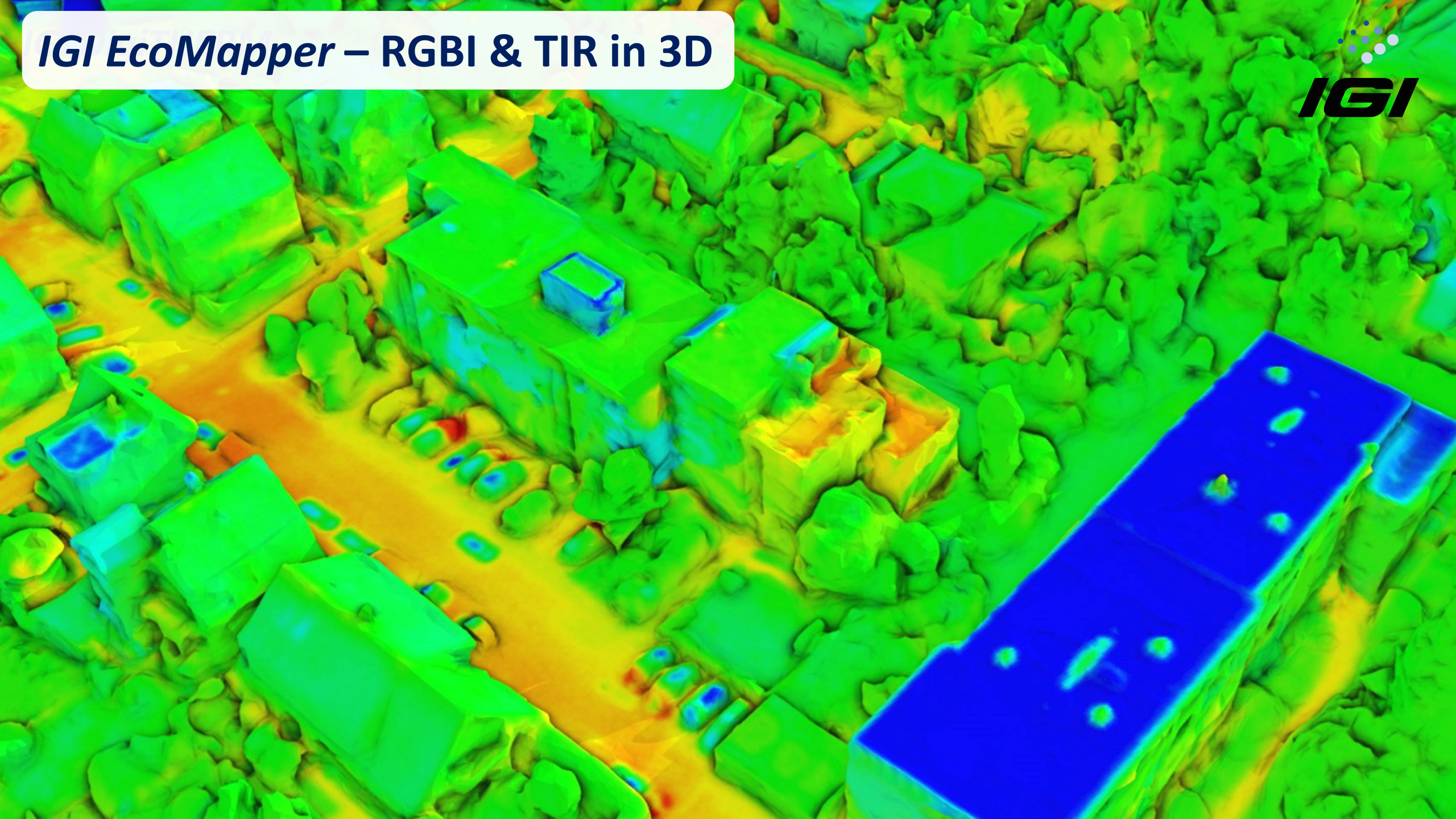




# IGI EcoMapper – RGBI & TIR in 3D



**IGI**

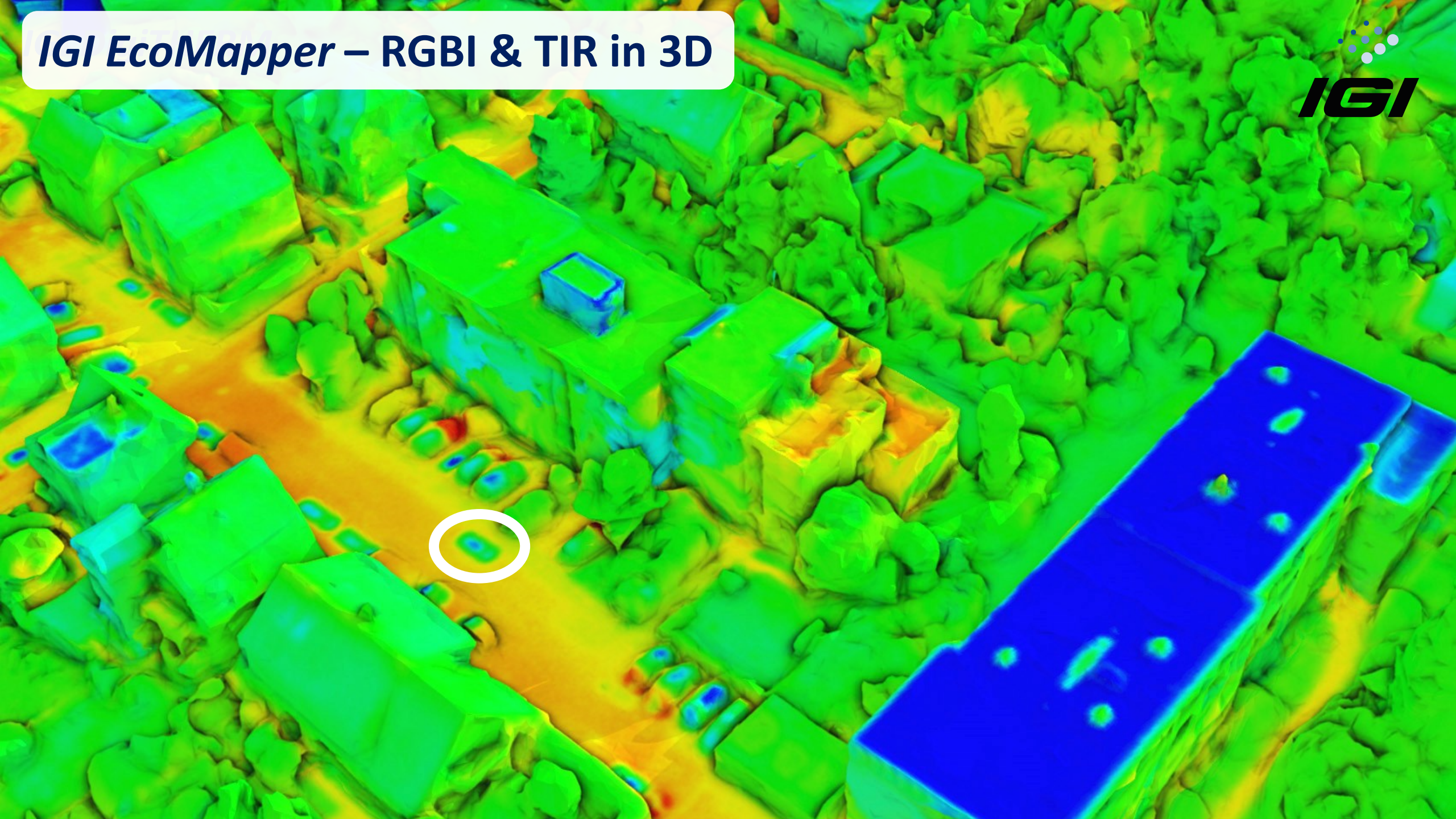




# IGI EcoMapper – RGBI & TIR in 3D



**IGI**





# IGI EcoMapper – RGBI & TIR in 3D





**И еще более сложная система?  
Возможно!**

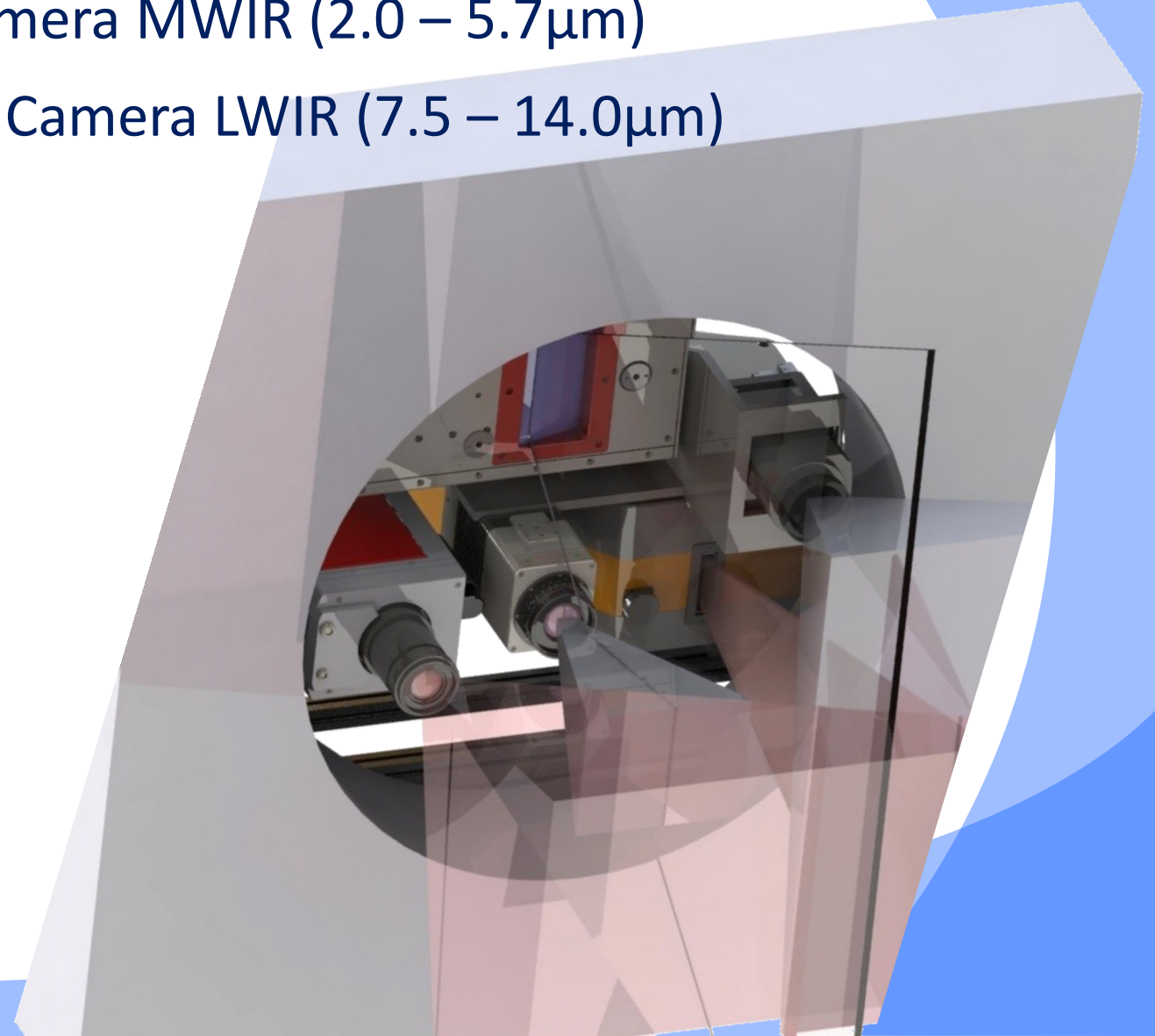
**And an even more complex system?  
It is possible !**



# Multi Sensor System for CAF, China (2019)



- DigiTHERM-640C Cooled Thermal Camera MWIR (2.0 – 5.7 $\mu$ m)
- DigiTHERM-1024 Uncooled Thermal Camera LWIR (7.5 – 14.0 $\mu$ m)
- DigiCAM 100
- LiteMapper 7800i
- ALSA Fenix Hyperspectral Camera



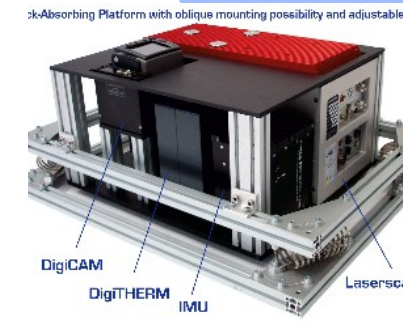
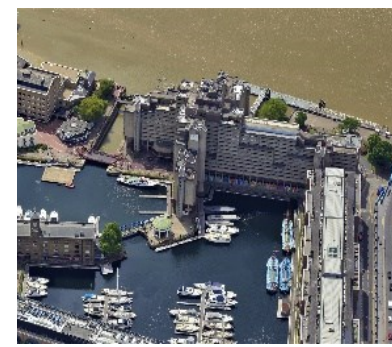
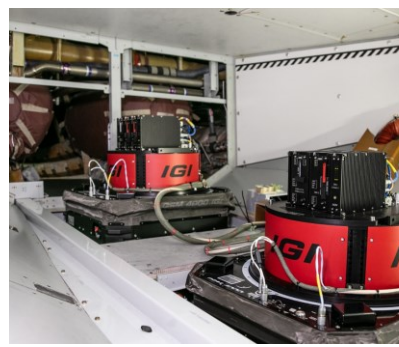


CAF-LiTHy:  
Chinese  
Academy of  
Forestry

Lidar-  
Thermal-  
Hyperspectral  
Airborne  
Observation  
System







- 45 years in the geospatial market
- Mission Planning & Flight Guidance
- Sensor Management
- GNSS/IMU Navigation

- Airborne Sensor Systems
- Mobile Mapping Solutions
- Turn-key Solutions
- **Defense Solutions**



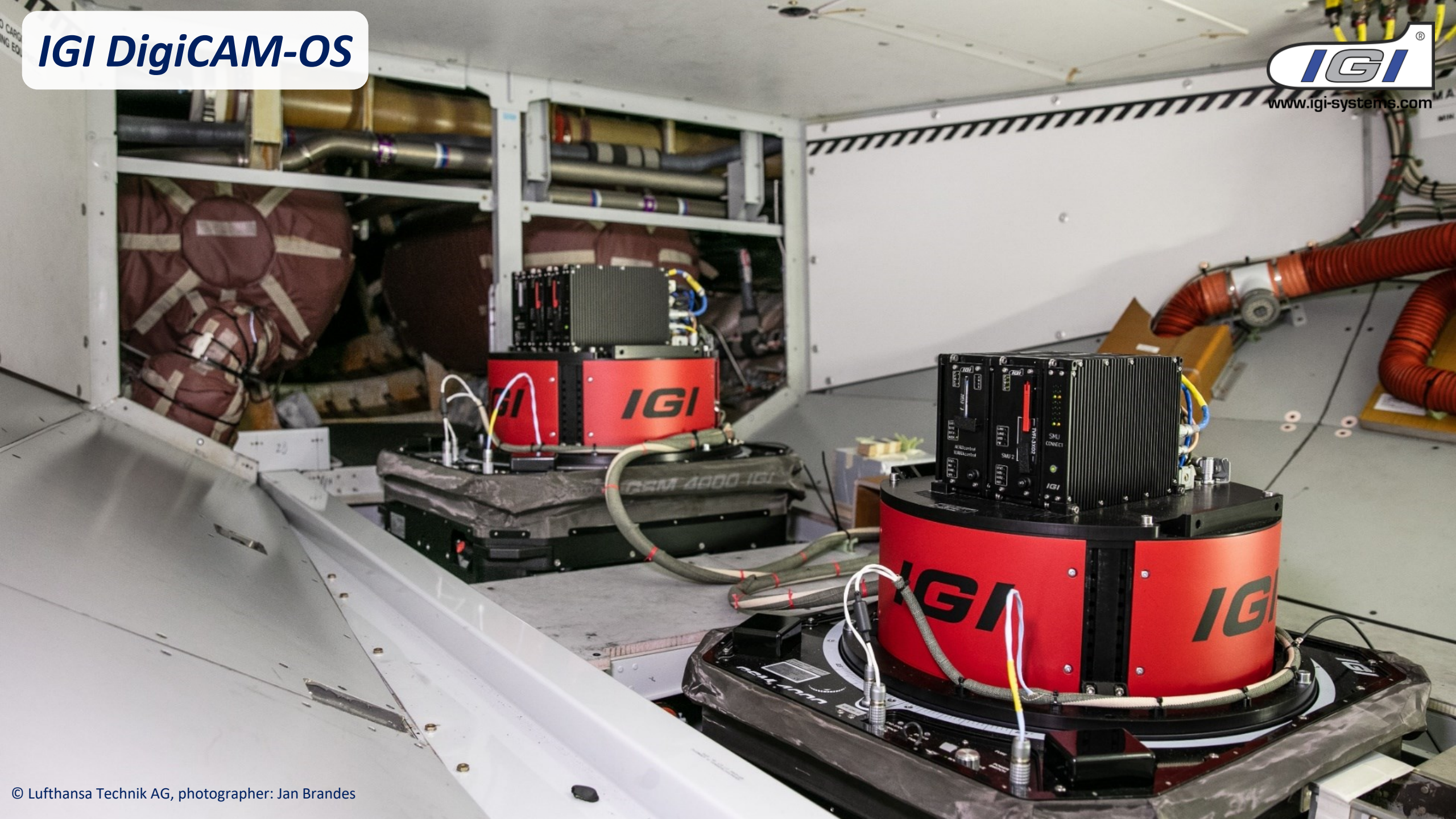


# Open Skies – Airbus A 319





# IGI DigiCAM-OS









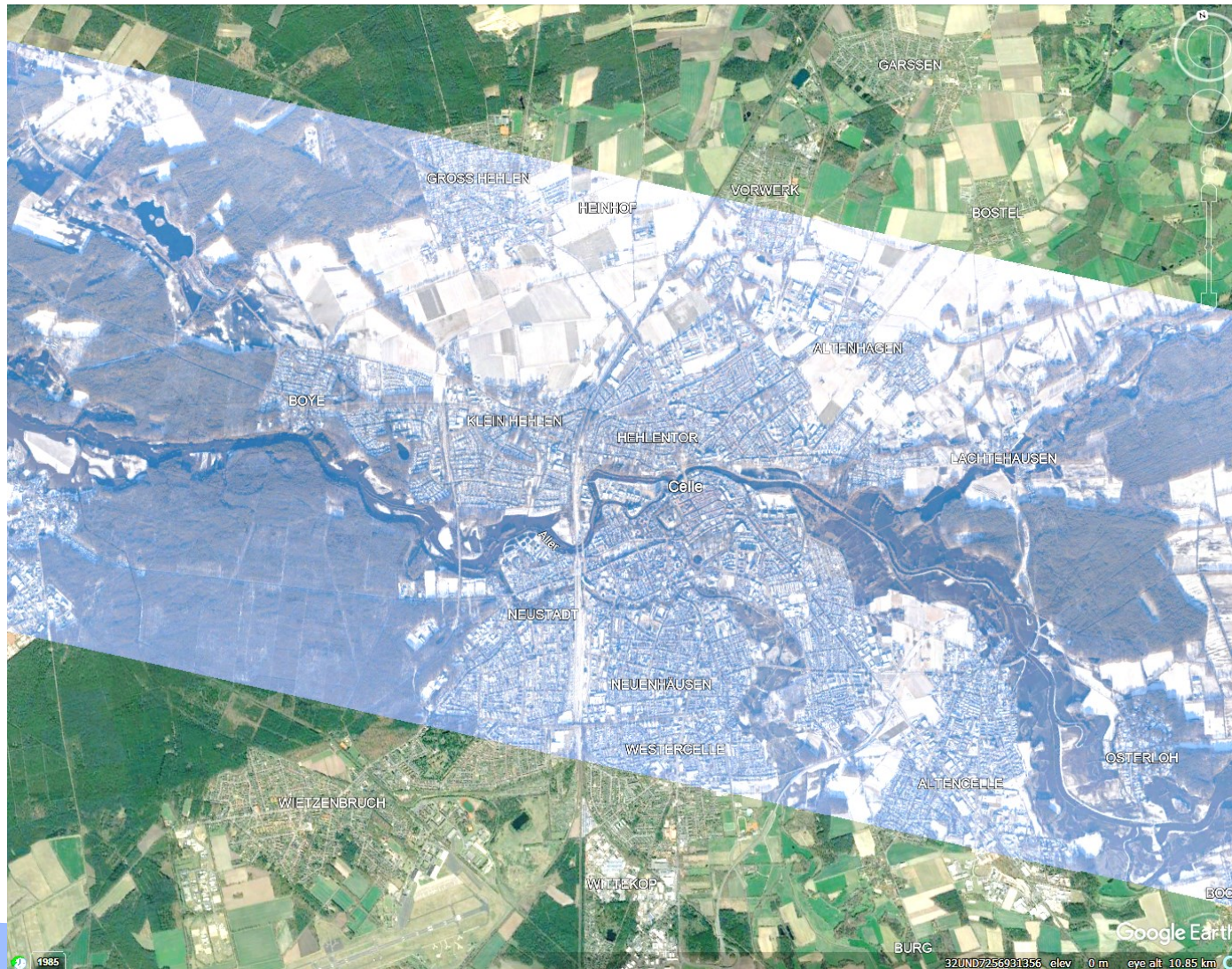
# 2024: alternative usage for the OS Airbus

## immediate desaster reaction: flood & fire





# 2024: alternative usage for the OS Airbus immediate desaster reaction: flood & fire









Copyright  
Bundeswehr





Copyright  
Bundeswehr





Copyright  
Bundeswehr













# Summary MockBa'24

The 2024 IGI product line-up offers great solutions for efficient survey work.

Customized to your specific needs.







**IGI**



**В чашке IGI  
все вкуснее**



**Спасибо большое!**