



Khmer
Geographic
Institute





Groupe ATGT

Through its nine entities - ATGT Géomètre-Expert, ATGTSM, ATGT Topo3D, ATGT Ingénierie, GEOS IMAGES, ATGT Tunisia, ATGT Ivoire, KGI (Cambodia), and ATGT Canada the ATGT Group helps you understand the region.



16000000

Turnover in euros



200

Employees



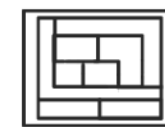
77

Professional Seniority



5

International Coverage



Land registry

topography & property appraisal.

[More +](#)



Real Estate

Estate appraisal from design to renewal or demolition of the property unit.

[More +](#)



Development

Studies for development or modification of an entire neighborhood.

[More +](#)



Infrastructure

A 3D transport infrastructure network database is available.

[More +](#)



Networks

Underground network detection.

[More +](#)



Sanitation & water

Topographic studies in confined space environments.

[More +](#)



Khmer Geographic Institute

Since 2014

Khmer Geographic Institute (KGI) is a company specializing in **PhOTOgrammetry** and **LiDARgrammetry**.

Our mission is to measure the earth in order to safeguard it.

KGI is a company that embraces the philosophy of **sustainable development**, training local staff of all levels in the science of photogrammetry.

KGI director David Mac Cartney has managed some of the world's largest aerial photogrammetry projects for clients such as Microsoft and Google.

Today, **KGI** benefits from over **28 years of experience**. **ATGT Groupe** is a shareholder of KGI, and can respond to any size **international project**.



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David Mac Cartney

28 years of international expertise

1996	InfoPict. Distributor of Cities Revealed technology, on-shelf orthophoto of Paris with viewer
1997	Co-founder of InterAtlas
1998	France's largest GSD 25cm orthophoto project covering more than 4,500 km ² in the Paris region
2000	1,200 km ² of GSD 12.5 cm orthophotos in the Lyon urban area - 2,400 km ² in the Paris region
2001	IGN's first co-production contract with a private player, 4,000 km ² around Paris GSD 50cm
2002	3,000 km ² GSD 12.5cm in the Paris region - 800 km ² Saint-Etienne, and 300 km ² Nancy GSD 20cm
2003	First digital flight in France with Intergraph camera - DMC - Ziimaging
2003	Paris and Cergy Pontoise at 12.5 cm and Reims at 16 cm
2004	5,000 km ² with Vexcel UltraCam D digital camera - Marseille, Aix, Lyon, Orléans GSD 20cm
2005	7 000 Km ² en région parisienne GSD 12,5cm UltraCam D + LiDAR Optech 31000
2006	Purchase of France's first digital camera UltraCAM D and aircraft manufacturers Cophaipe and Sphair
	Microsoft, Google, Page Jaune, CBRE... Coverage France urban GSD 6,25cm and departmental 20 cm
2007 - 2014	Urban : 30 000 km ²
	Rural : 300,000 km ²
	33 properties in the Paris region acquired in 3D - oblique system developed in-house innovative company OSEO Anvar
	DMC was in charge of production and R&D and processed over 1 million photos during this period.
2014 - 2024	Founder and director of KGI, which will become a subsidiary (63%) of the ATGT Group in 2021
	Offshore photogrammetry production center and photo and LiDAR facility
	First LiDAR system in Cambodia, bought with JEB Engineering

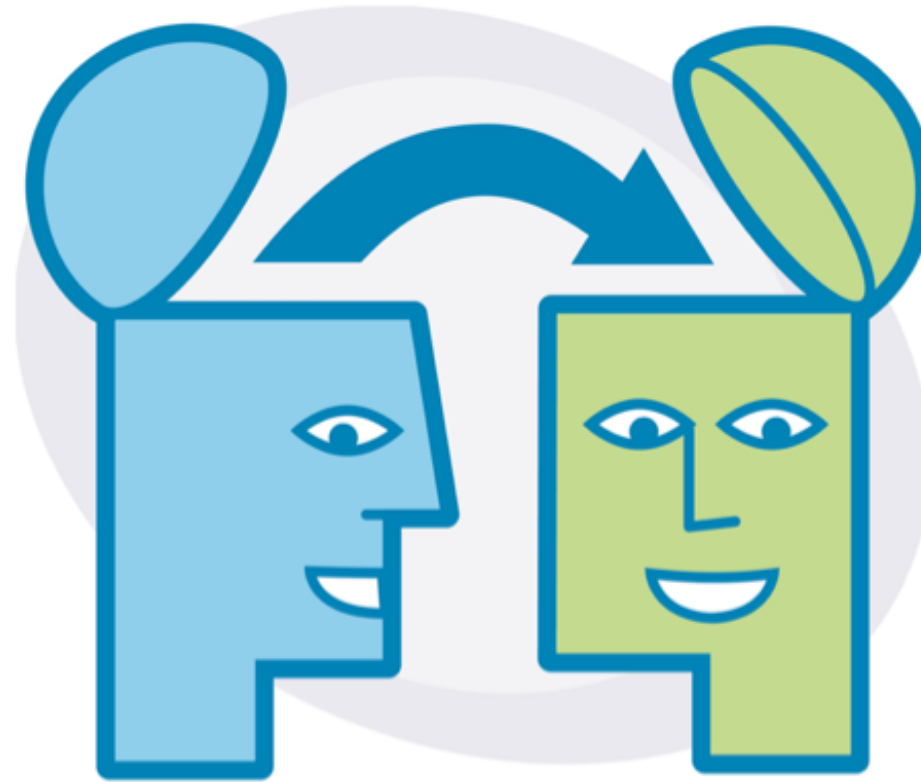


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A Cambodian company

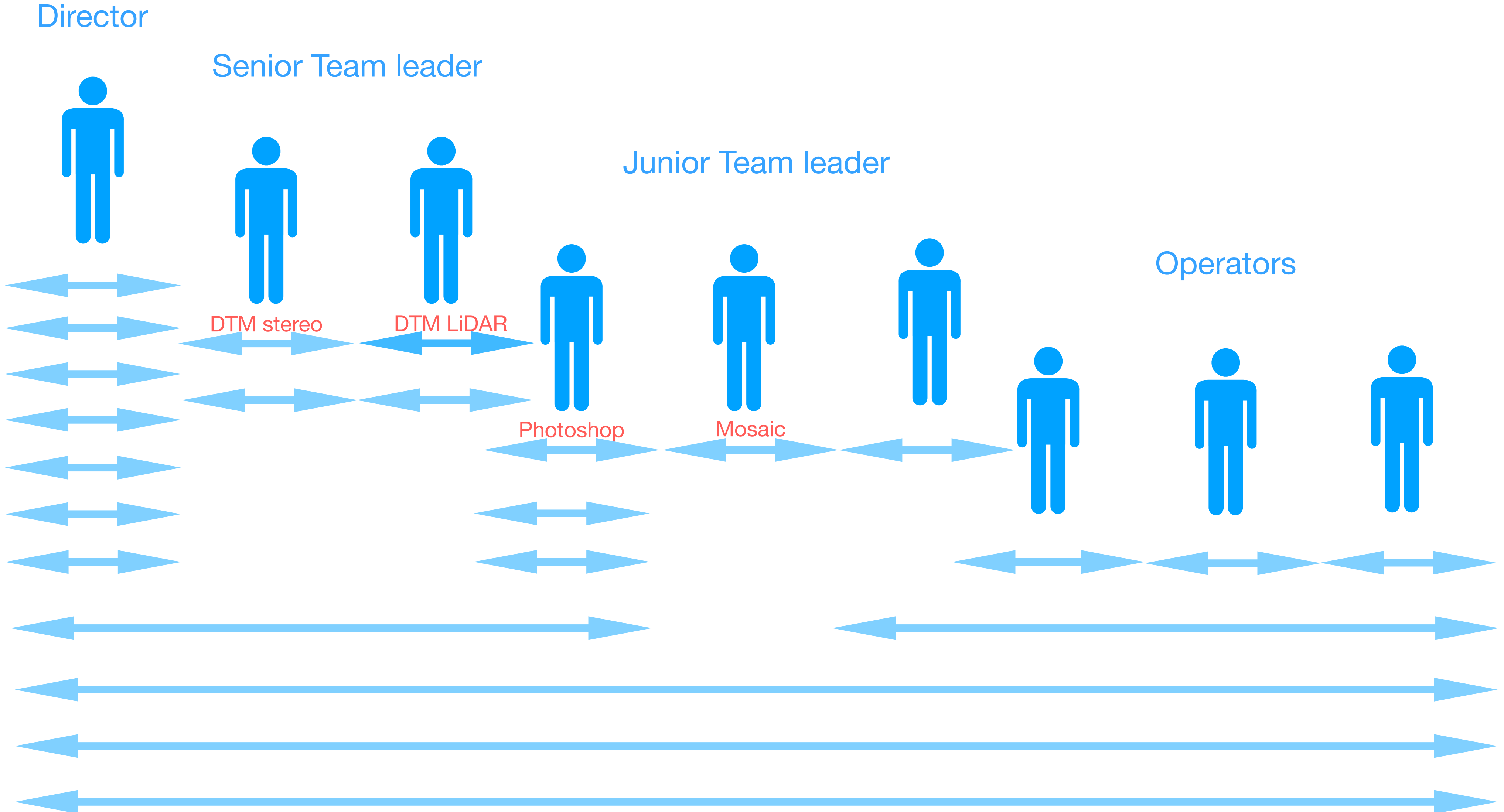


with International specialists

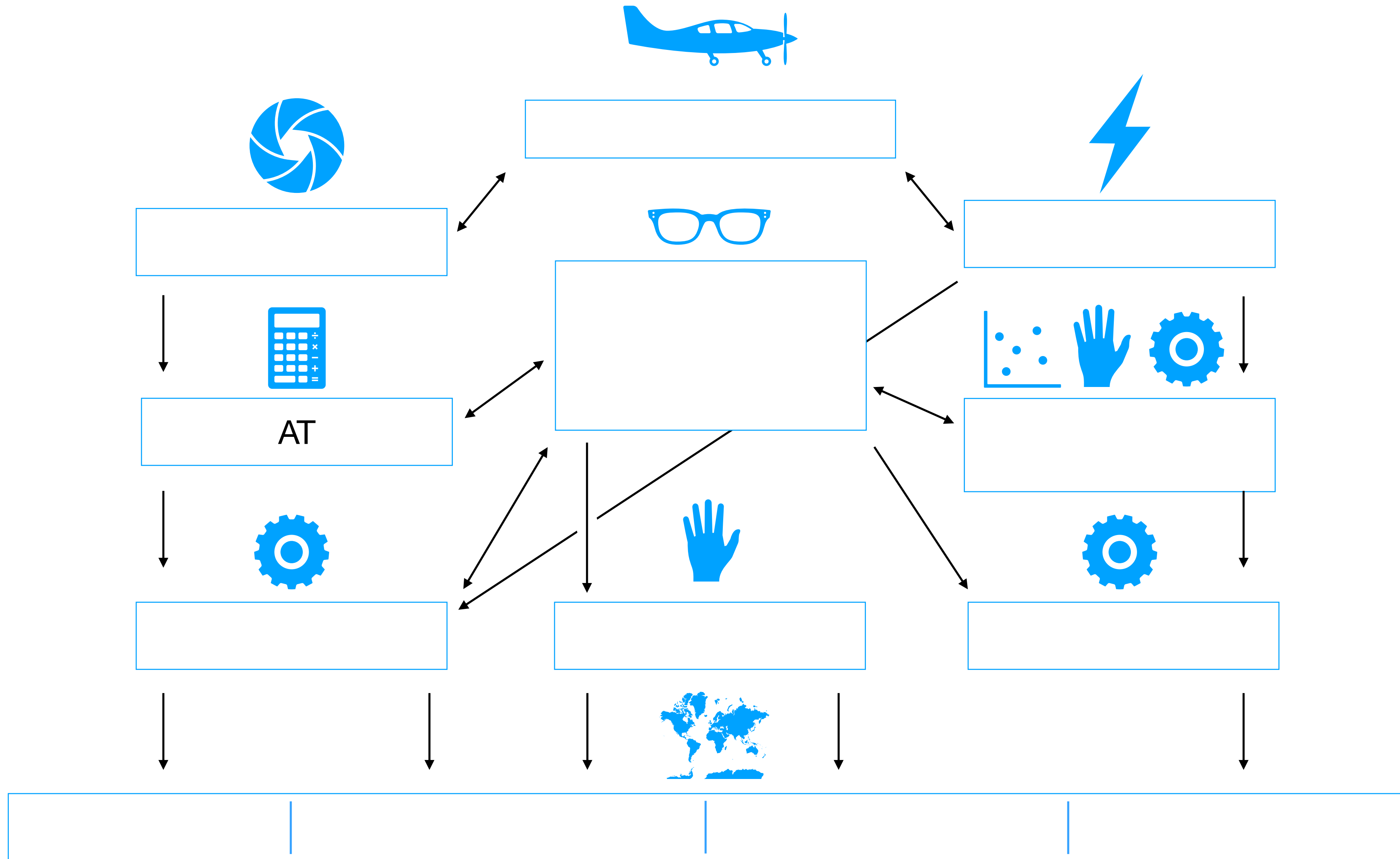


and a local well trained team



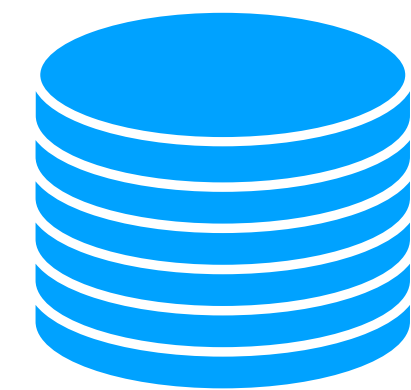


Khmer Geographic Institute



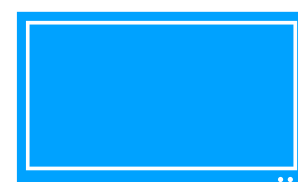


Khmer Geographic Institute





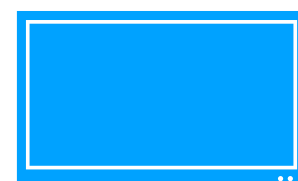
Khmer Geographic Institute



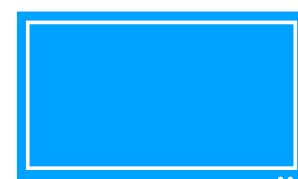
1 x Match-AT - **AT**



1 x Match-3DX - **SGM DOP**



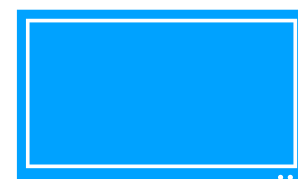
3 x DTMaster - stereoplotter - **DOP & LiDAR**



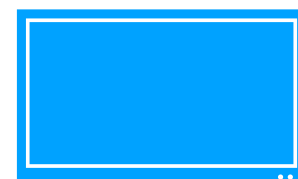
2 x Orthomaster - **DOP** (digital ortho photos)



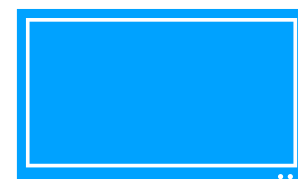
3 x ORTHO Vista - **Radiometry, Mosaic lines and Tiling**



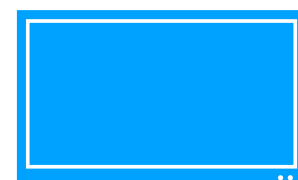
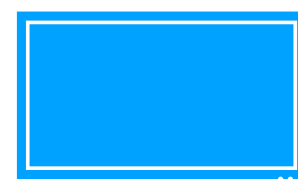
1 x MetaShape - **AT - DEM - DOP**



1 x LASTools, 1 x Strip Alignment (Baysmap) - **LiDAR**



1 x POSPac Applanix + StarSolve for Genius - **LiDAR**



Discover intelligent photogrammetry & LiDARgrammetry



Photogrammetric triangulation

Processing of various types of imagery: aerial (nadir, oblique), close-range, satellite.

Auto calibration: frame (incl. fisheye), spherical & cylindrical cameras.

Multi-camera projects support.

Scanned images with fiducial marks support.

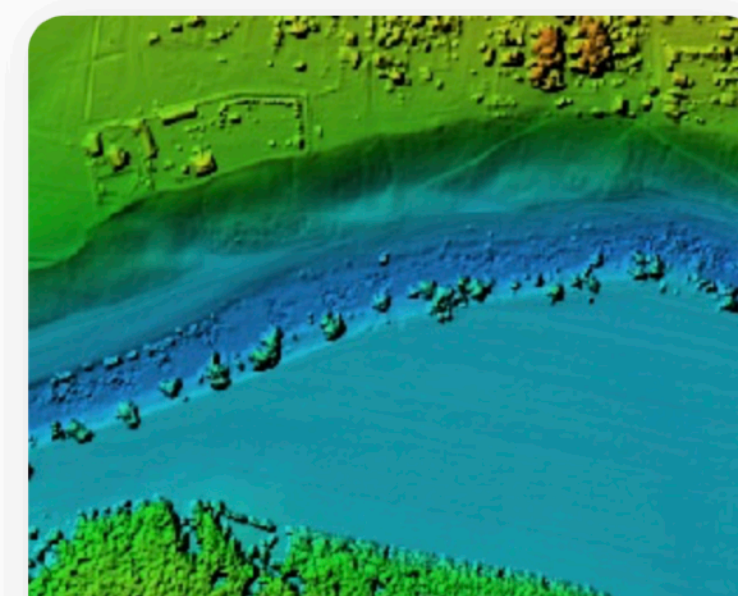


Dense point cloud: editing and classification

Elaborate model editing for accurate results.

Automatic multi-class points classification to customize further reconstruction.

Import/export to benefit from classical point data processing workflow.



Digital elevation model: DSM/DTM generation and editing

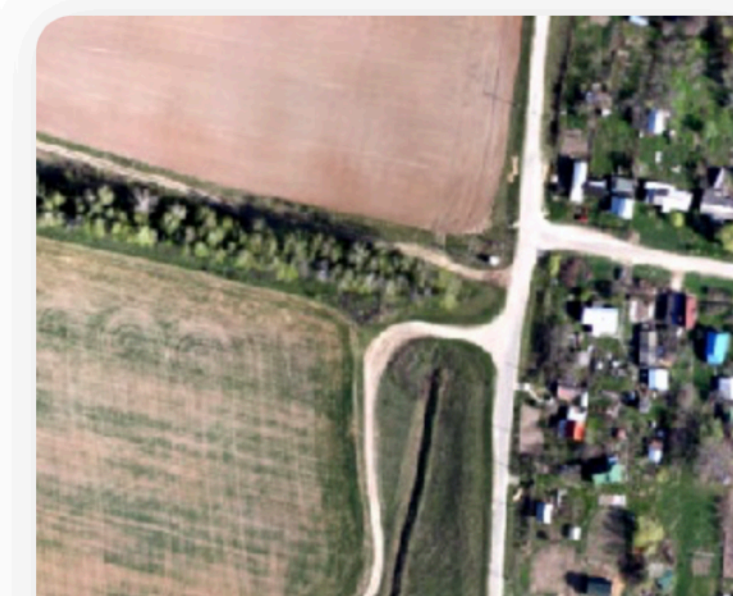
Digital surface and/or digital terrain model – depending on the project.

Georeferencing based on EXIF meta data/flight log, GCPs data.

EPSG registry coordinate systems support: WGS84, UTM, etc.

Configurable vertical datums based on the geoid undulation grids.

DEM editing: breaklines drawing, fill tools.



Georeferenced orthomosaic generation

Georeferenced orthomosaic: most-GIS-compatible GeoTIFF format; KML files to be located on Google Earth.

Export in blocks for huge projects.

Color correction for homogeneous texture.

Inbuilt ghosting filter to combat artifacts due to moving objects.

Custom planar and cylindrical projection options for close range projects.

1 Scan



2 Process



3 Analyse



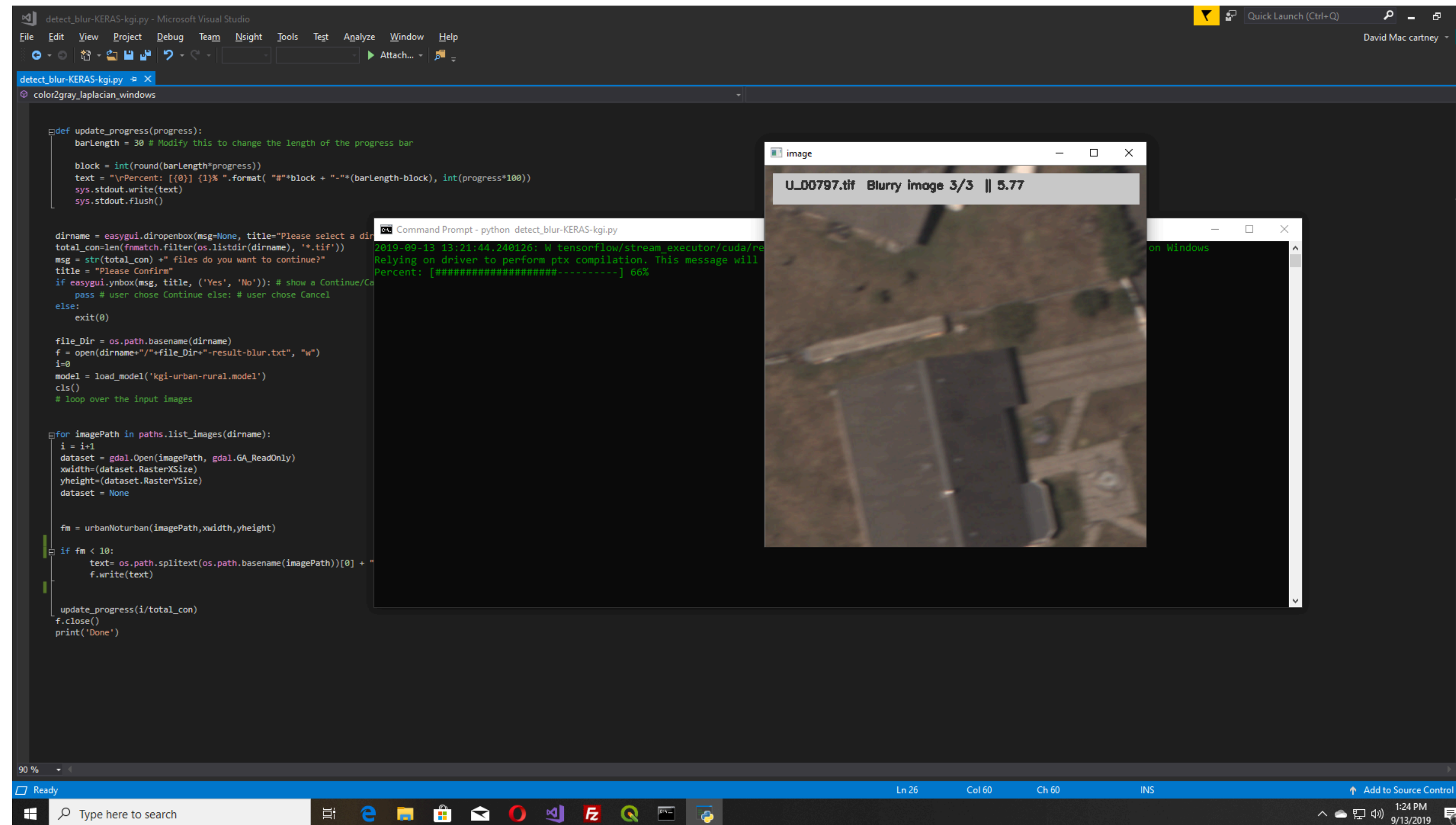
Next-Gen 3D Content Technology Based on Multi-SLAM & 3DGS

Applications in Industries

<p>Geomatics</p>	<p>Smart City</p>	<p>Emergency Security</p>
<p>Cultural Tourism and Creative Industries</p> <ul style="list-style-type: none"> Online Viewing Tourist Attraction Management Virtual & Real Interaction <p>Centimeter-level restoration of scenic areas, architecture, and decorative details, providing visitors with an immersive viewing experience</p>	<p>Energy and Mining</p>	<p>Metaverse</p>

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David McCartney R&D : Deep learning



```
def update_progress(progress):
    barLength = 30 # Modify this to change the length of the progress bar
    block = int(round(barLength*progress))
    text = "\rPercent: [{0}] {1}% ".format( "#" * block + "-" * (barLength - block), int(progress*100))
    sys.stdout.write(text)
    sys.stdout.flush()

dirname = easygui.diropenbox(msg=None, title="Please select a dir")
total_con=len(fnmach.filter(os.listdir(dirname), '*.tif'))
msg = str(total_con) + " files do you want to continue?"
title = "Please Confirm"
if easygui.yesno(msg, title, ('Yes', 'No')): # show a Continue/Cancel dialog
    pass # user chose Continue else: # user chose Cancel
else:
    exit(0)

file_dir = os.path.basename(dirname)
f = open(dirname+"/"+file_dir+"/result-blur.txt", "w")
i=0
model = load_model('kgi-urban-rural.model')
cls()
# loop over the input images

for imagePath in paths.list_images(dirname):
    i = i+1
    dataset = gdal.Open(imagePath, gdal.GA_ReadOnly)
    xwidth=(dataset.RasterXSize)
    yheight=(dataset.RasterYSize)
    dataset = None

    fm = urbanNoturban(imagePath,xwidth,yheight)

    if fm < 10:
        text= os.path.splitext(os.path.basename(imagePath))[0] + "
        f.write(text)

    update_progress(i/total_con)
f.close()
print('Done')
```

```
2019-09-13 13:21:44.240126: W tensorflow/stream_executor/cuda/nvml_core.cc:310: Relying on driver to perform ptx compilation. This message will be shown only once.
Percent: [#####-----] 66%
```

U_00797.tif Blurry image 3/3 || 5.77

KGI-GSD 3
Param Export

<p>Inputs</p> <p>GSD: <input type="text" value="0.25"/> Surf. height: <input type="text" value="0"/></p> <p>Speed Kt: <input type="text" value="140"/> OAT C°: <input type="text" value="-47.39"/></p> <p>QNH: <input type="text" value="1013"/> Turn / m: <input type="text" value="5"/></p> <p><input checked="" type="checkbox"/> ISA</p>	<p>Overlap</p> <p>Nadir (master)</p> <p>Longitudinal: <input type="text" value="60"/> Lateral: <input type="text" value="30"/></p> <p>Oblique</p> <p>Longitudinal overlap: <input type="text" value="80"/></p> <p>Front/back camera (NM):</p>	<p>Camera setup</p> <p>Camera angle °: <input type="text" value="45"/> Oblique</p> <p>Shutter speed - 1 /: <input type="text" value="450"/> Nadir</p> <p><input type="text" value="800"/> Oblique</p>	<p>Area in meter</p> <p>Width distance: <input type="text" value="1000"/></p> <p>Height distance: <input type="text" value="1000"/></p> <p>Surface: => 1 sq km</p> <p>flight time: => 23 S</p>	<p>Camera selection, all flights EAST-WEST</p> <p>Nadir: <input type="text" value="DNC IV 143"/></p> <p>Oblique: <input type="text" value="PhaseOne-80 80 mm"/></p> <p>Focal : 143.0 mm CCD : 3.760 µm X : 13,760 px Y : 31,520 px</p> <p>Focal : 80.0 mm CCD : 5.200 µm X : 7,760 px Y : 10,328 px</p> <p>Landscape (X fligth direc...) Landscape (X fligth direc...)</p>
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flight parameters

Digital scale: Flying altitude: Ft

ANALOG equivalent: Flight level:

Quality calculation

Leaning (%): Blurring (px): X Y (m):

RMS (m): B/H (m): Z (m):

AT = 1.5 px; DTM 3 px

Acquisition

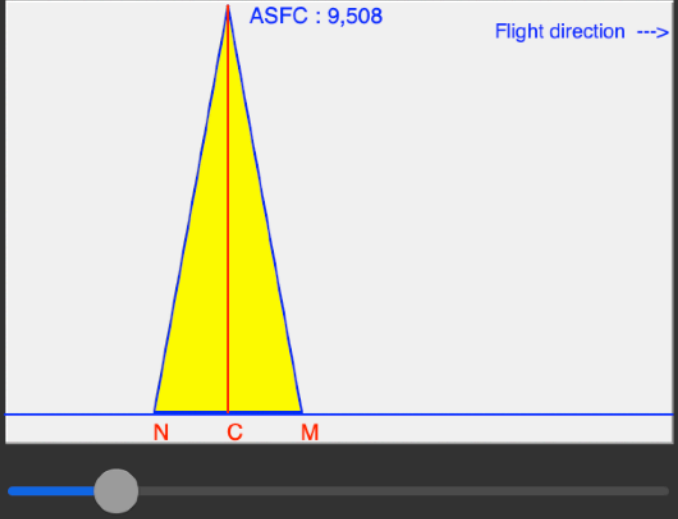
Frame: Way point distance: Shoot speed: S

X size: Nbr of tracks:

Frame: Line space: Nbr of frames:

Y size: on track: total:

<p>Overlap</p> <p>+ 1 line and 1 frame</p> <p>Longitudinal: <input type="text" value="80"/> Lateral: <input type="text" value="65"/></p> <p>- 1 line and 1 frame</p> <p>Longitudinal: <input type="text" value="20"/> Lateral: <input type="text" value="-40"/></p>	<p>Offset</p> <p>Temperature C°</p> <p>ISA: <input type="text" value="-47.39"/> Ft: <input type="text" value="0"/></p> <p>QNH Level difference: <input type="text" value="0.00"/> Ft</p>	<p>Frame drawing</p> <p>NM: <input type="text" value="3,440"/></p> <p>NC: <input type="text" value="1,720"/></p> <p>CM: <input type="text" value="1,720"/></p>
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Inputs in meters except the speed and camera angle, © Khmer Geographic Institute Co., Ltd. Groupe ATGT 2025, the result is an indication and shall not be used for a real flight plan!

Computation

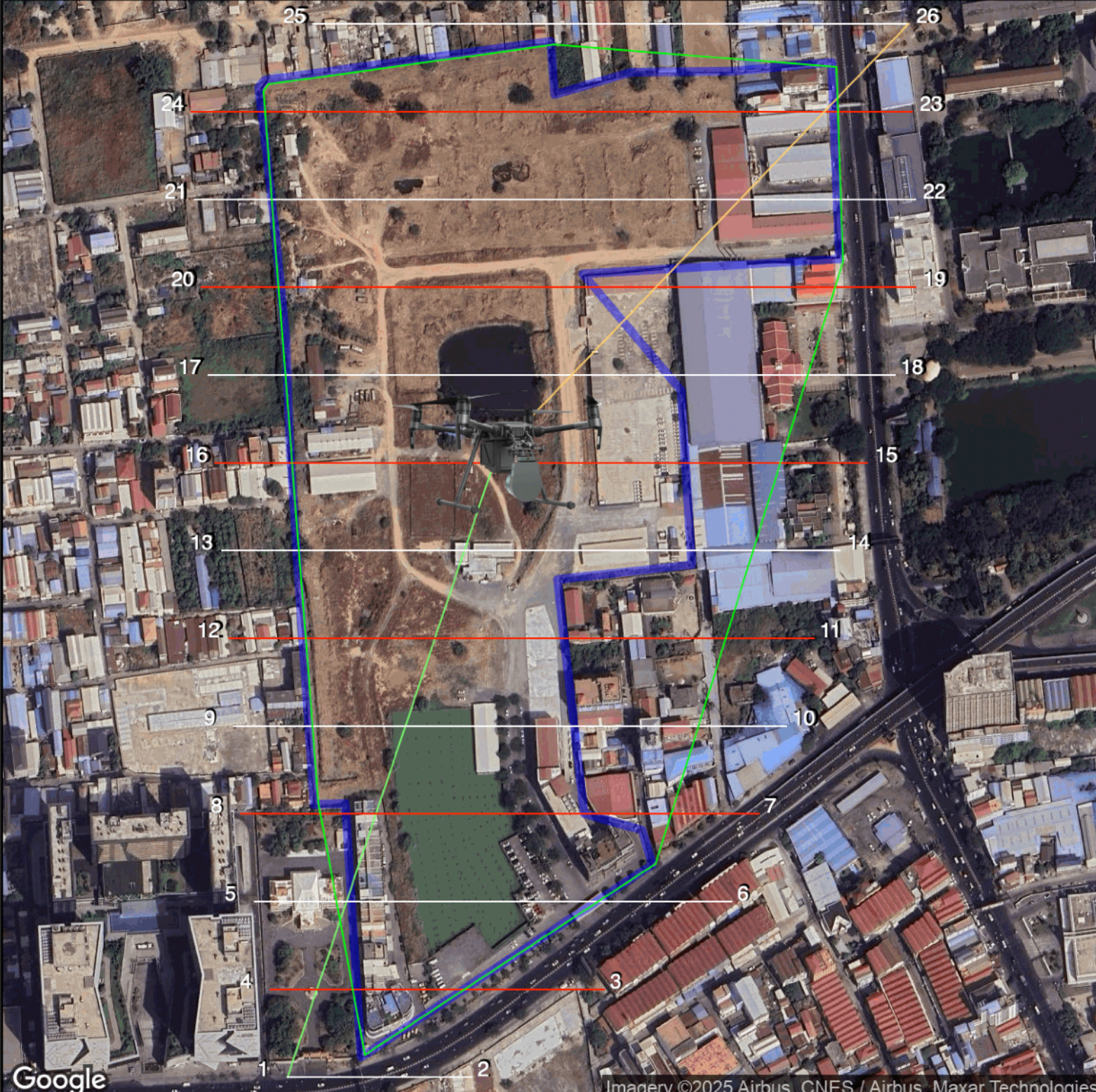
Khmer Geographic Institute

David McCartney R&D : LiDAR Planner

2025 - LiDAR Planner 2.1.0 by KGI for SureStar Genius LiDAR & DJI M300 - Made in Cambodia

Open KML Client poly Normal Optimised Compute Flight

GSD : 1.17 | Scale : 1/3257° Mission all



Google Imagery ©2025 Airbus, CNES / Airbus, Maxar Technologies

X : 487828.254m | Y : 1278301.973m Normal Flip

Turning Mode Pass Continuity Curvature

Mission Name Mission

First line direction 90 °
0 to 360°

Speed 8 m/s
2 to 20 m/s

Altitude above ground 80 m.
40 to 200 m.

Max Time 20 mins
2 to 20 mins

REC bandwidth 180 m.
≈ 60% overlap

Bandwidth 60 m.
60 to 200m.

Line buffer 50 m.
5 to 100m.

Corner Radius 0.2 °

Mission parameters

Nbr Lines 12

Nbr points/m² 70

Duration mins 14

Base Height (ellipsoid) -2

Base Centroid
Lat : 11.567204° | Long : 104.885938°

Mission area 152,950m²

Mission distance 6,680m

KML GO

Khmer Geographic Institute

David McCartney R&D : XGRIDS LCC web viewer

Test our Online Viewer



Groupe ATGT Means

For large projects

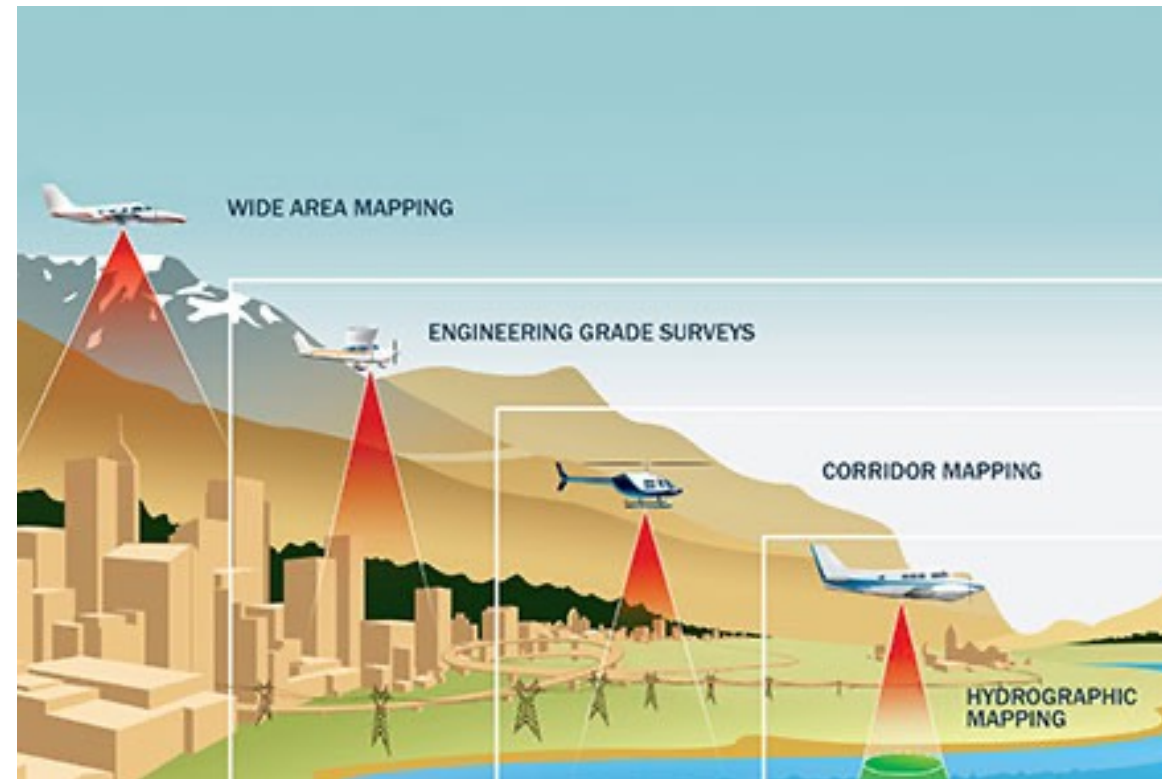


GALAXY T2000

Wide Area Mapping Sensor

Next generation performance, power, and accuracy with revolutionary SwathTRAK™ and PulseTRAK™ technology

A breakthrough in collection efficiency



Groupe ATGT Means For medium-sized projects



JEB & KGI Means

For small projects

- DJI M300
- Genius LiDAR
- PI Camera

Photo & LiDAR



Applications



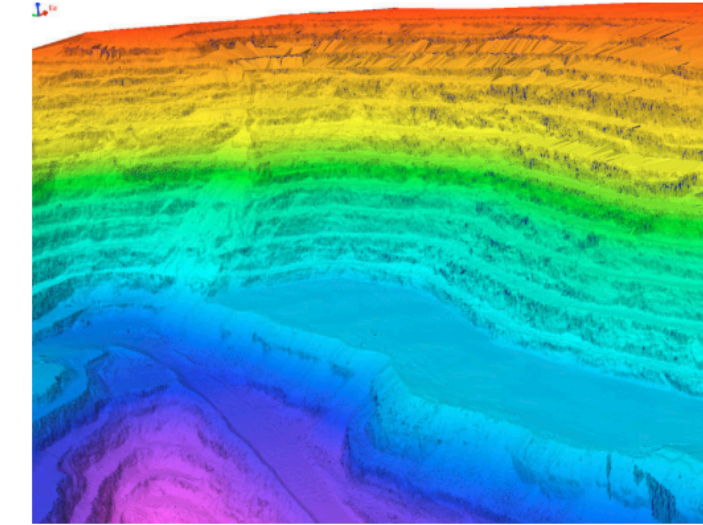
Agriculture



Environmental



Forestry



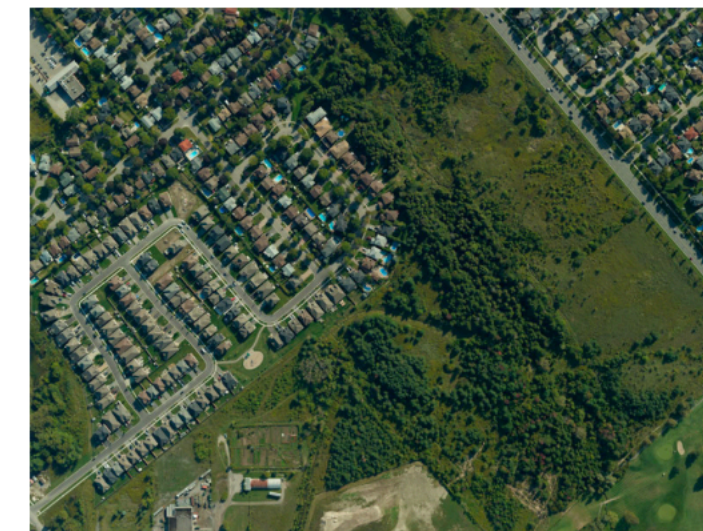
Geology, Mining,
Geotechnical



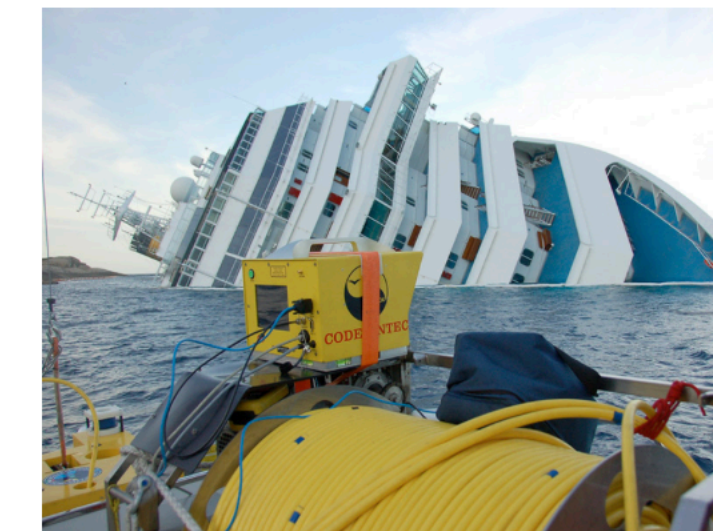
Wide Area Mapping



Urban Mapping



Digital
Photogrammetry



Disaster Management



Corridor and
Asset



Engineering



Coastal and
Marine



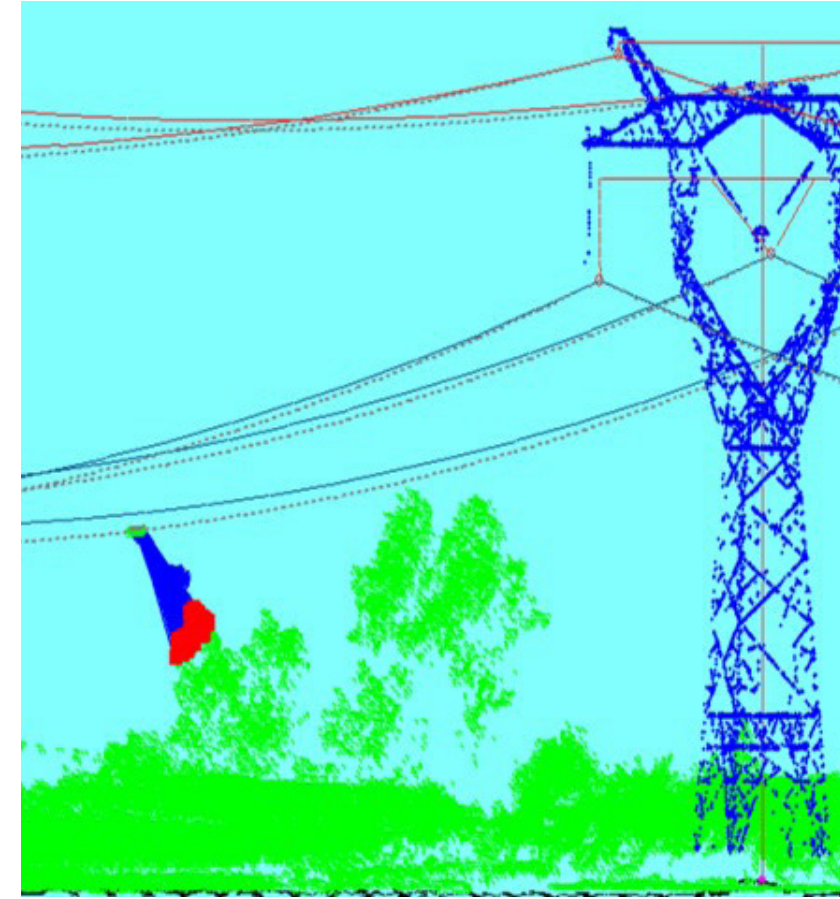
Defense and
Security

Applications

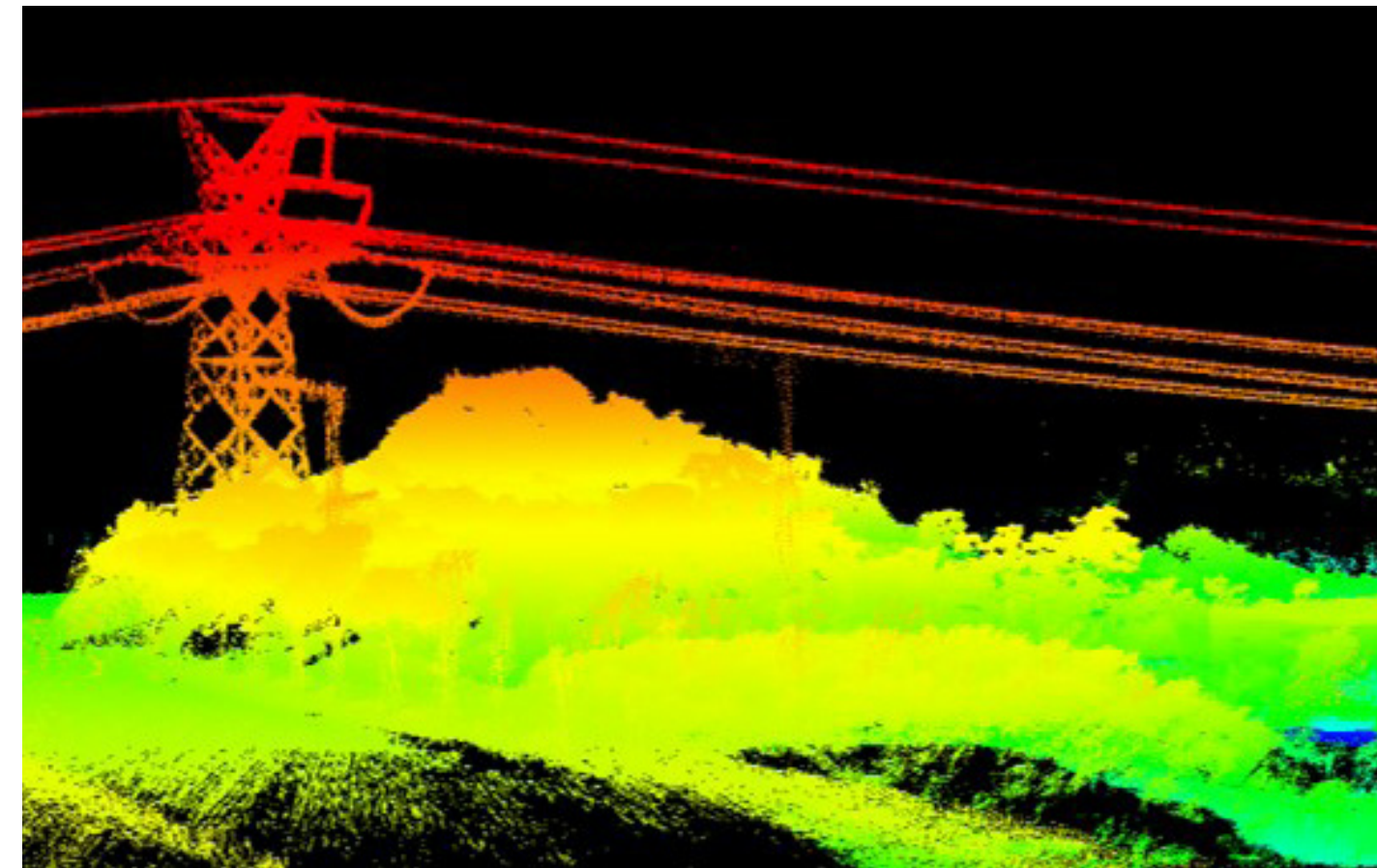
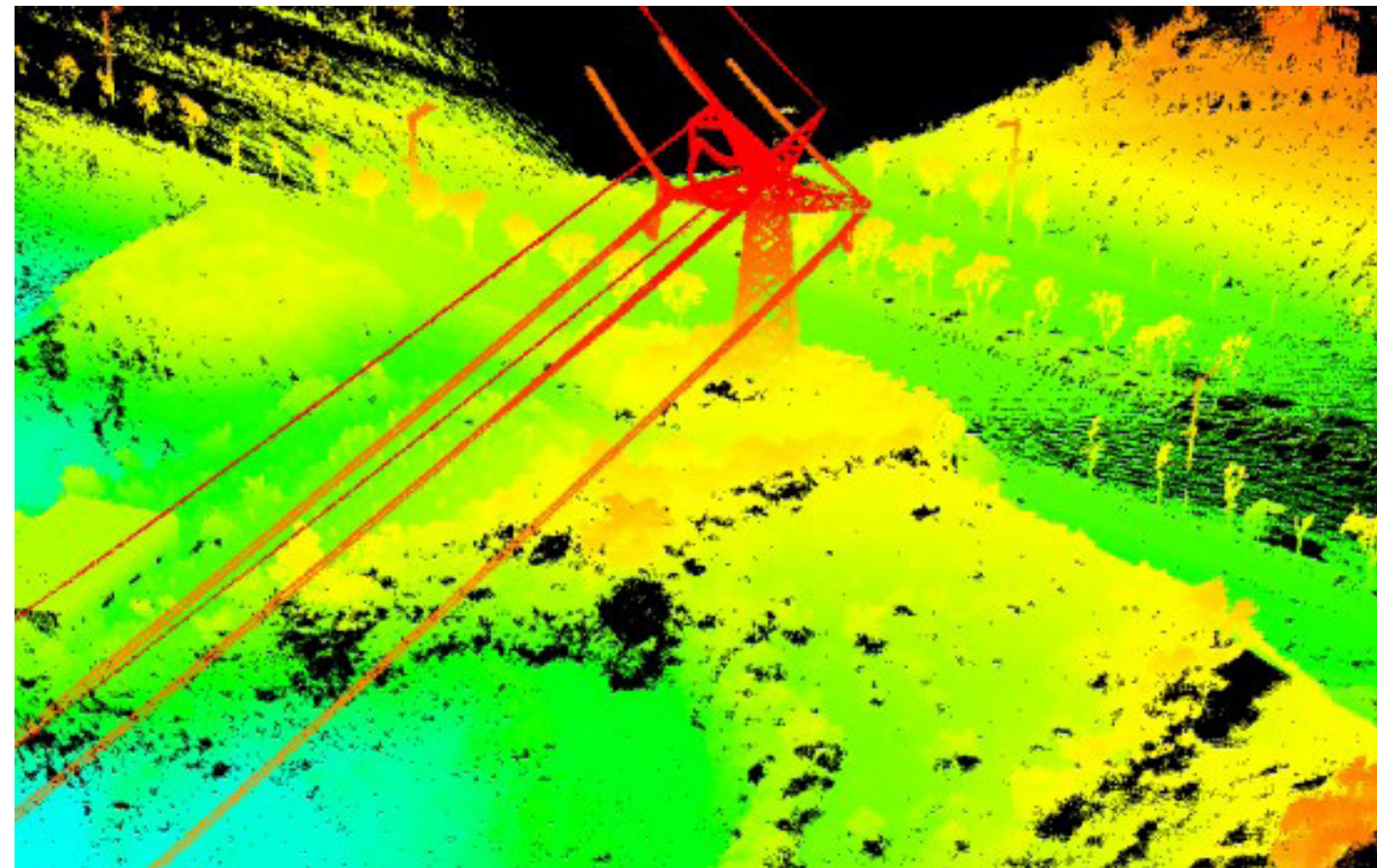
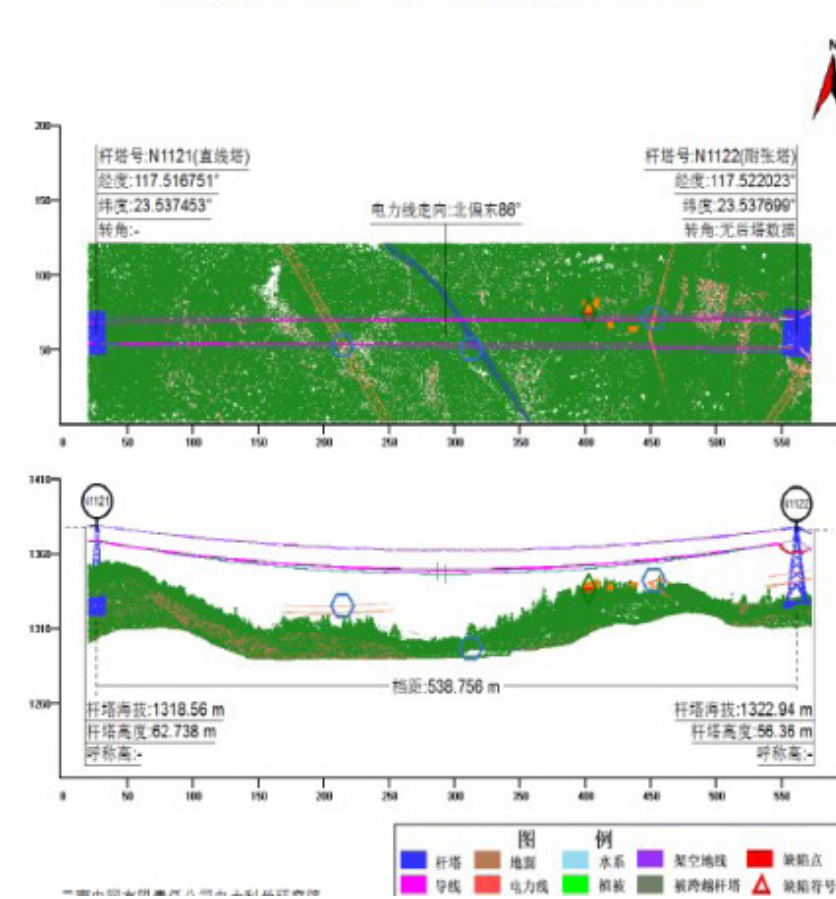
Transmission Line Inspection with LiDAR



Point cloud collected by Genius



Single wood evaluation

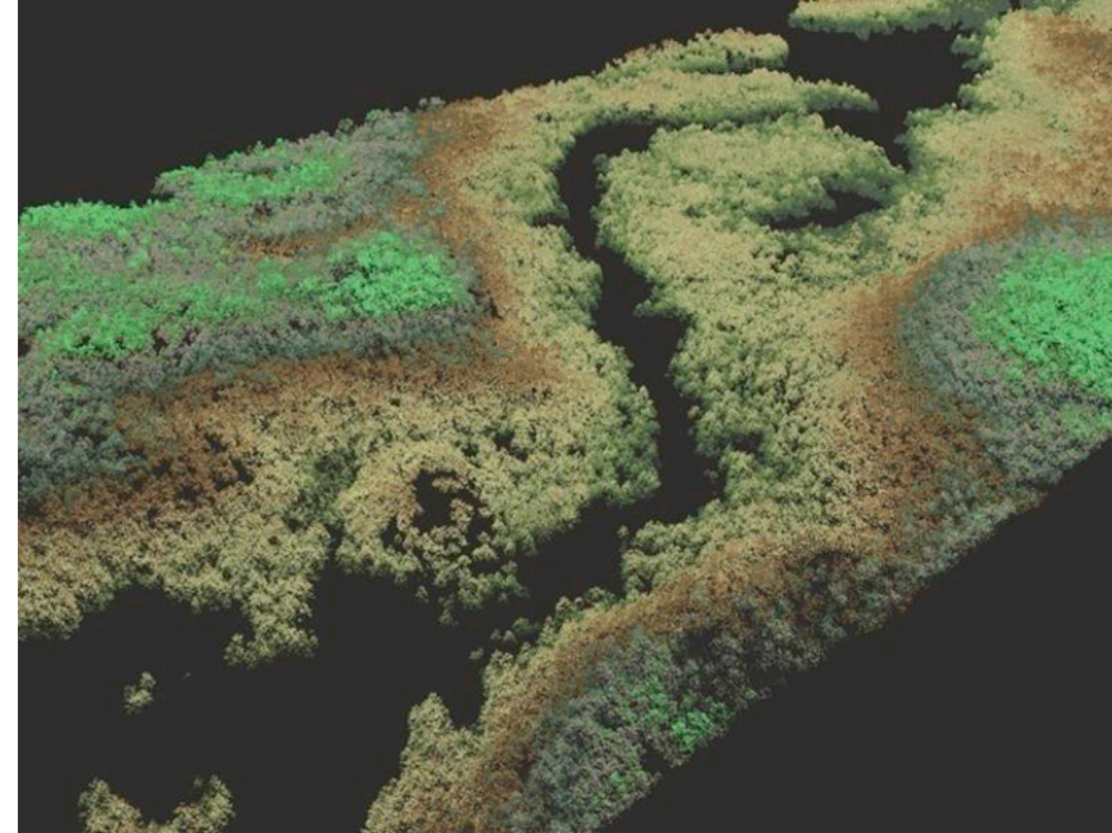


Point cloud collected by Genius

Applications

Monitoring **global warming** and its consequences on **plant** and **life**.
LiDAR is an indispensable **tool** for **management** and **forecasting**!

LiDAR to estimate forest biomass



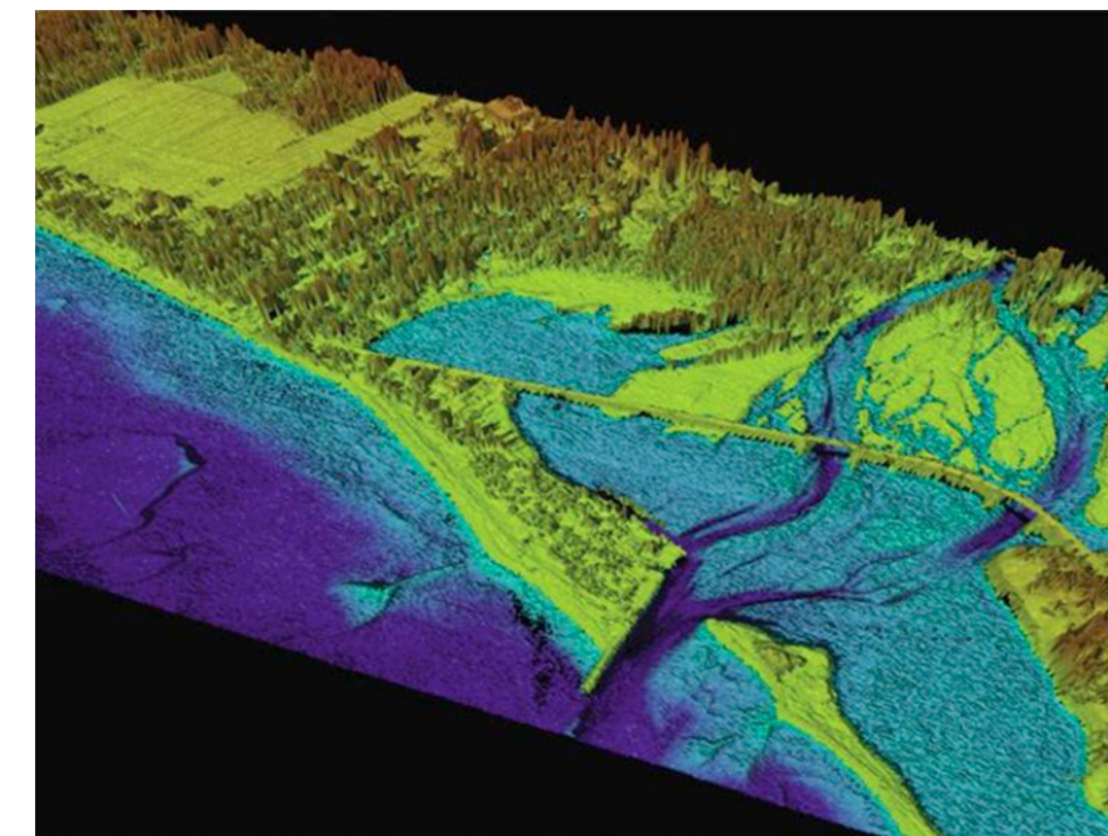
Measure tree heights, crowns & diversity



Safely assess environmental conditions



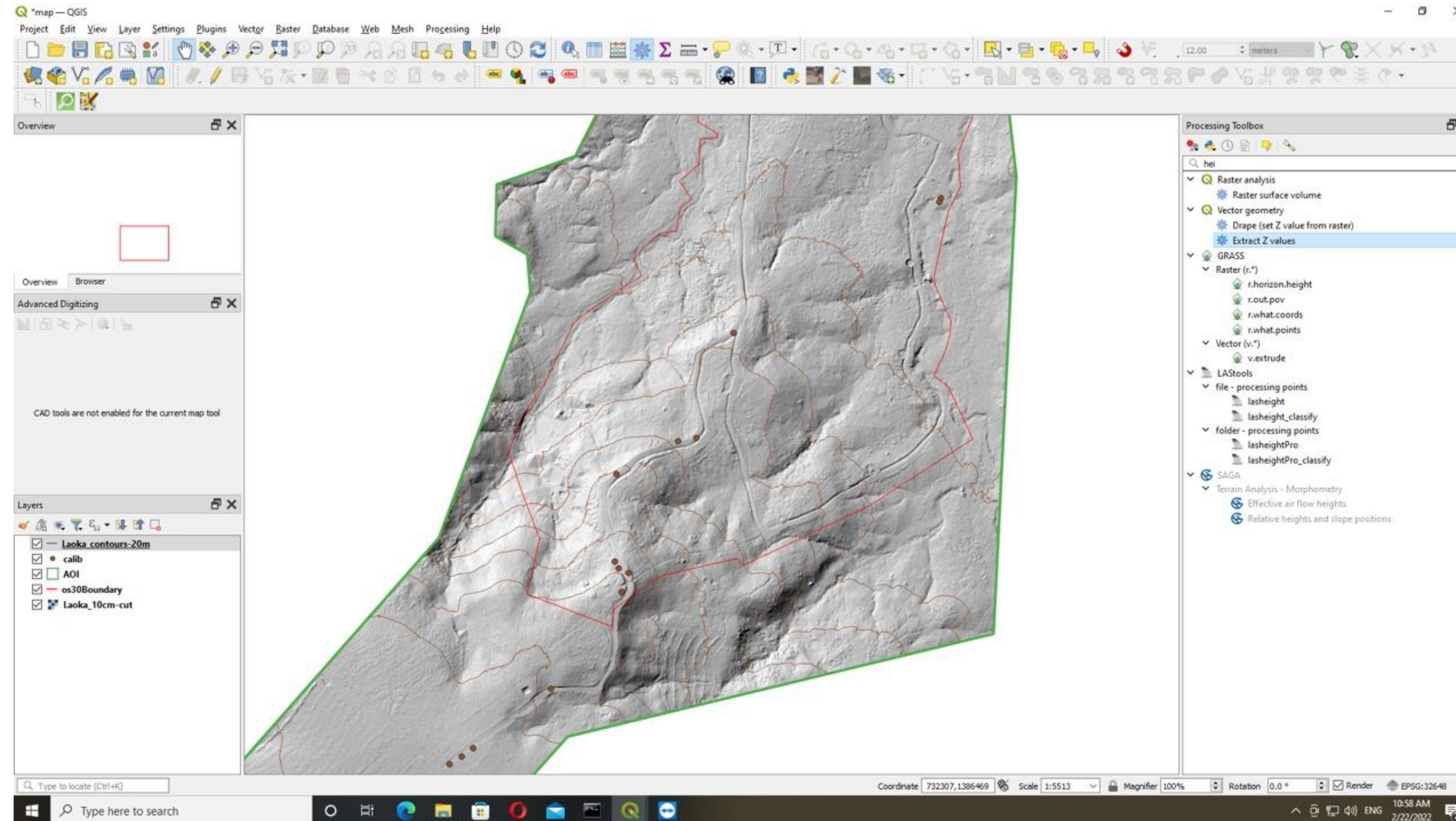
Sensors for terrain & water



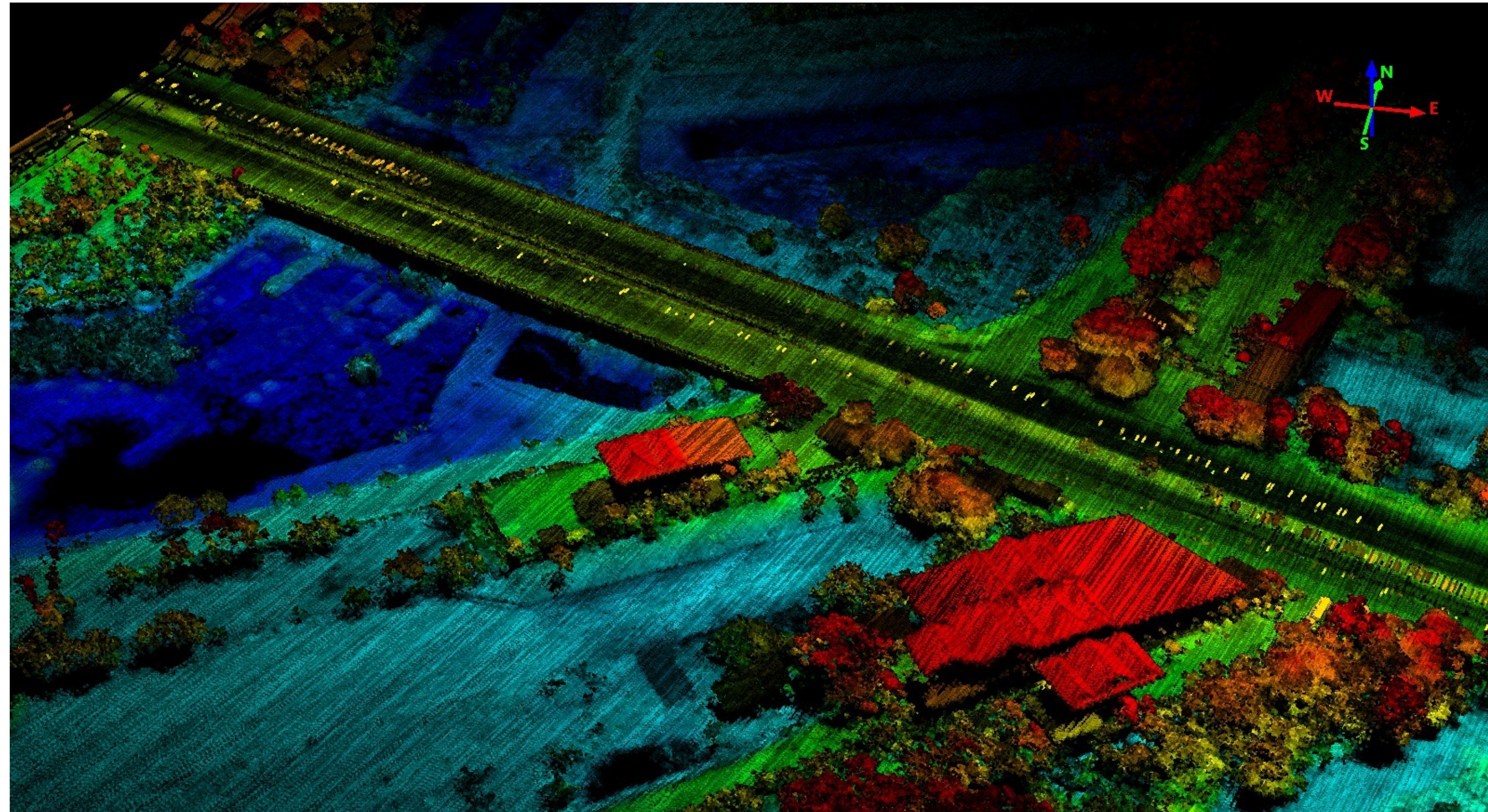
Seamless topo/bathy



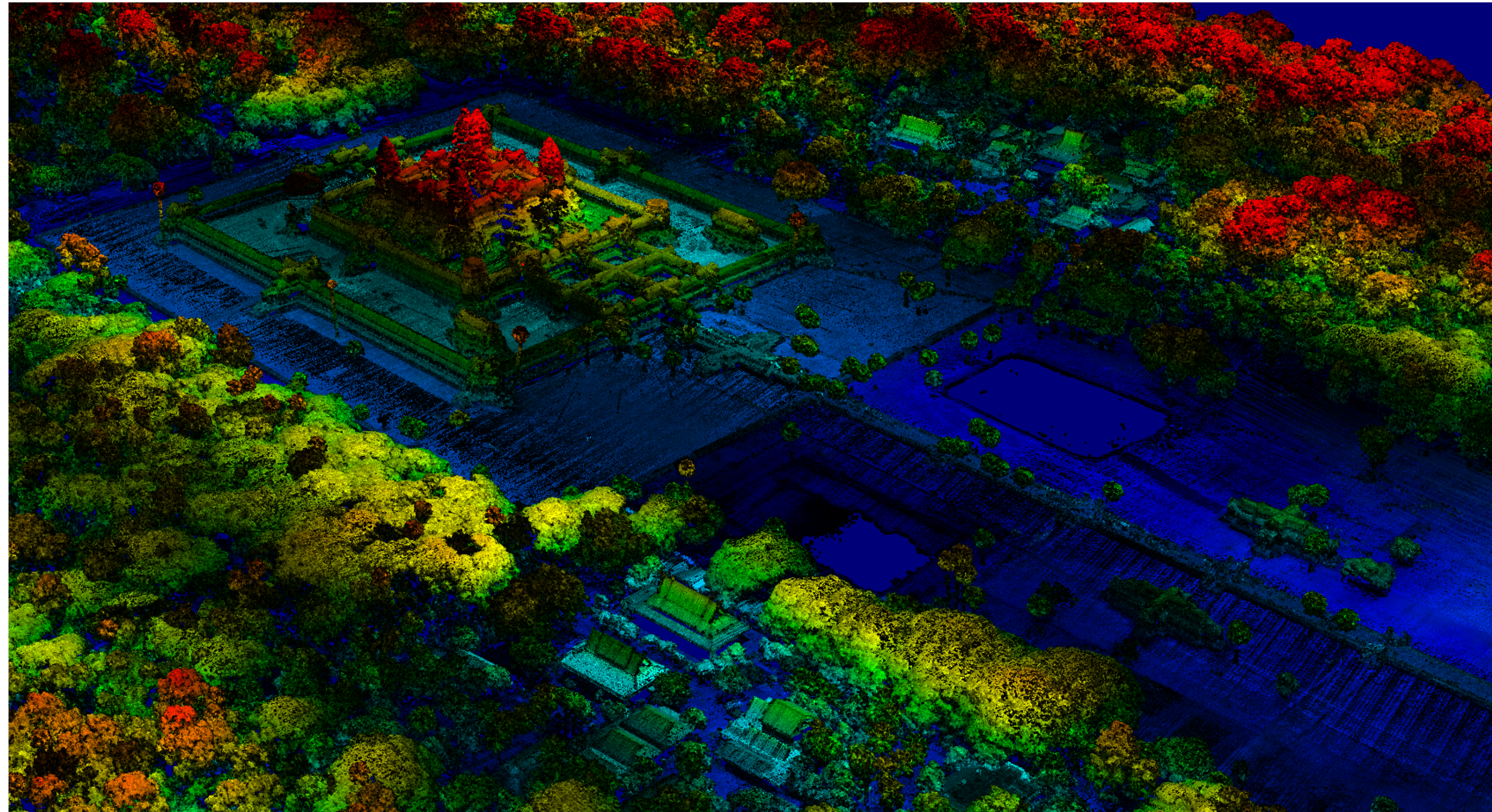
Orthophoto



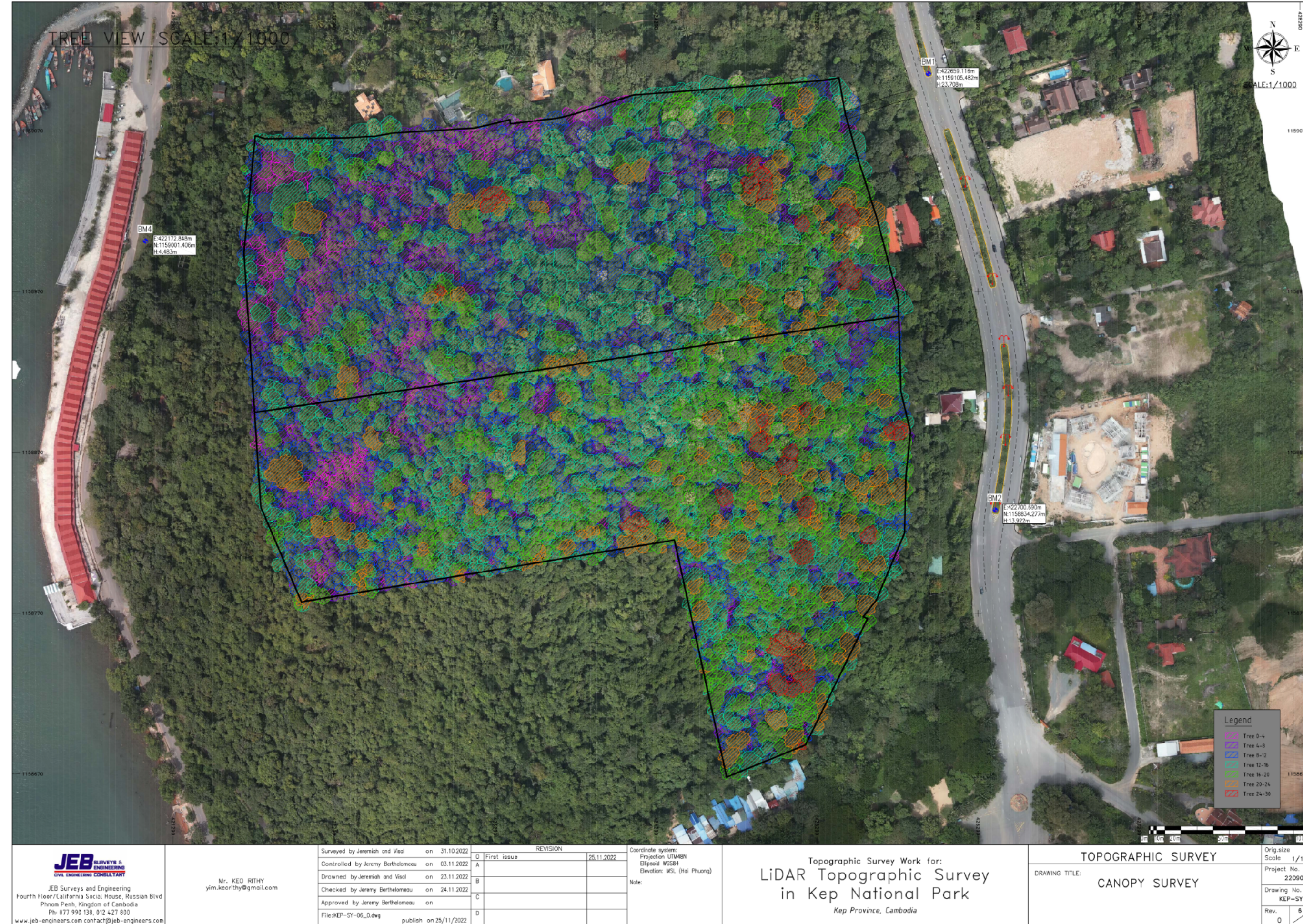
DTM



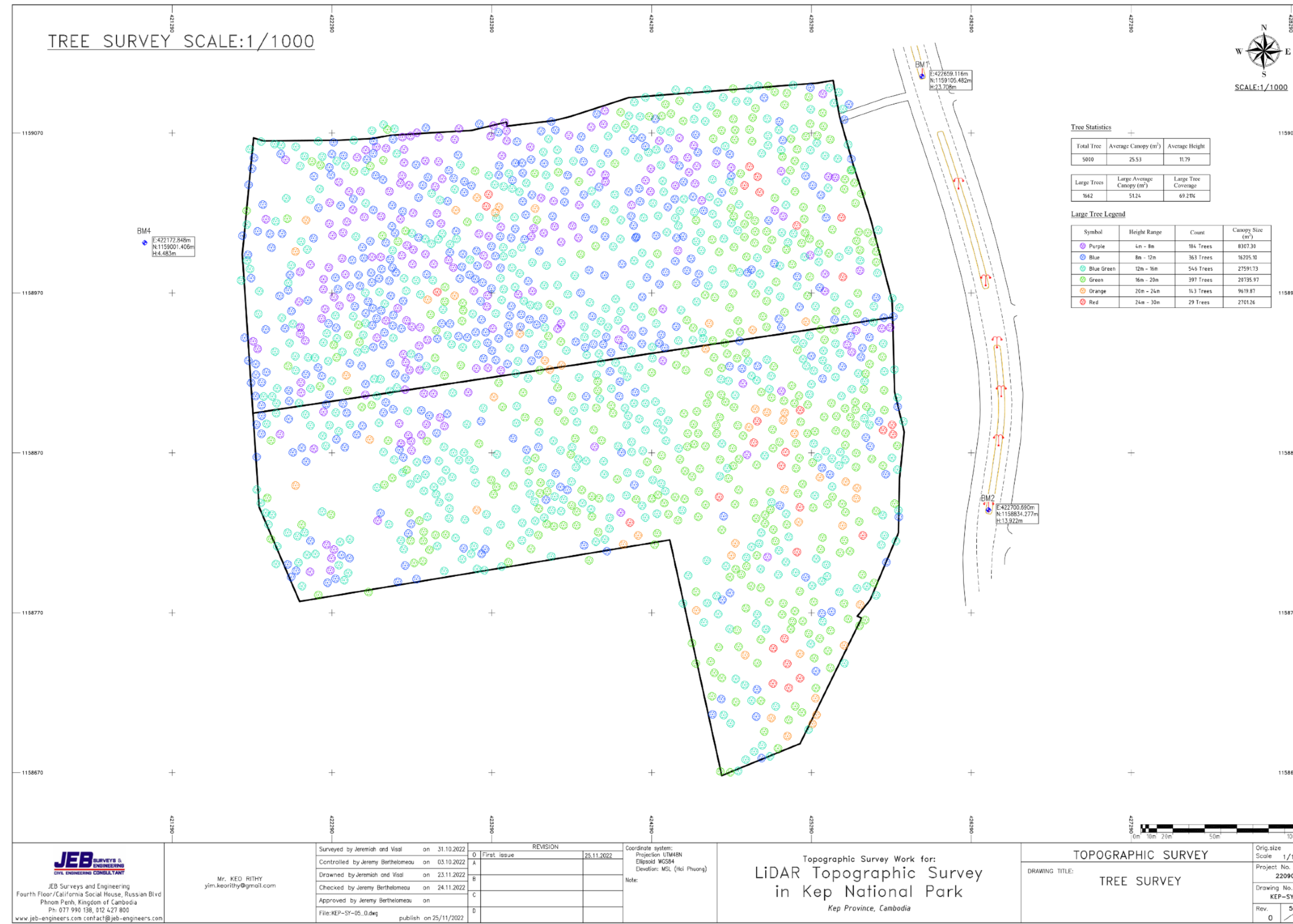
LiDAR for Engineering



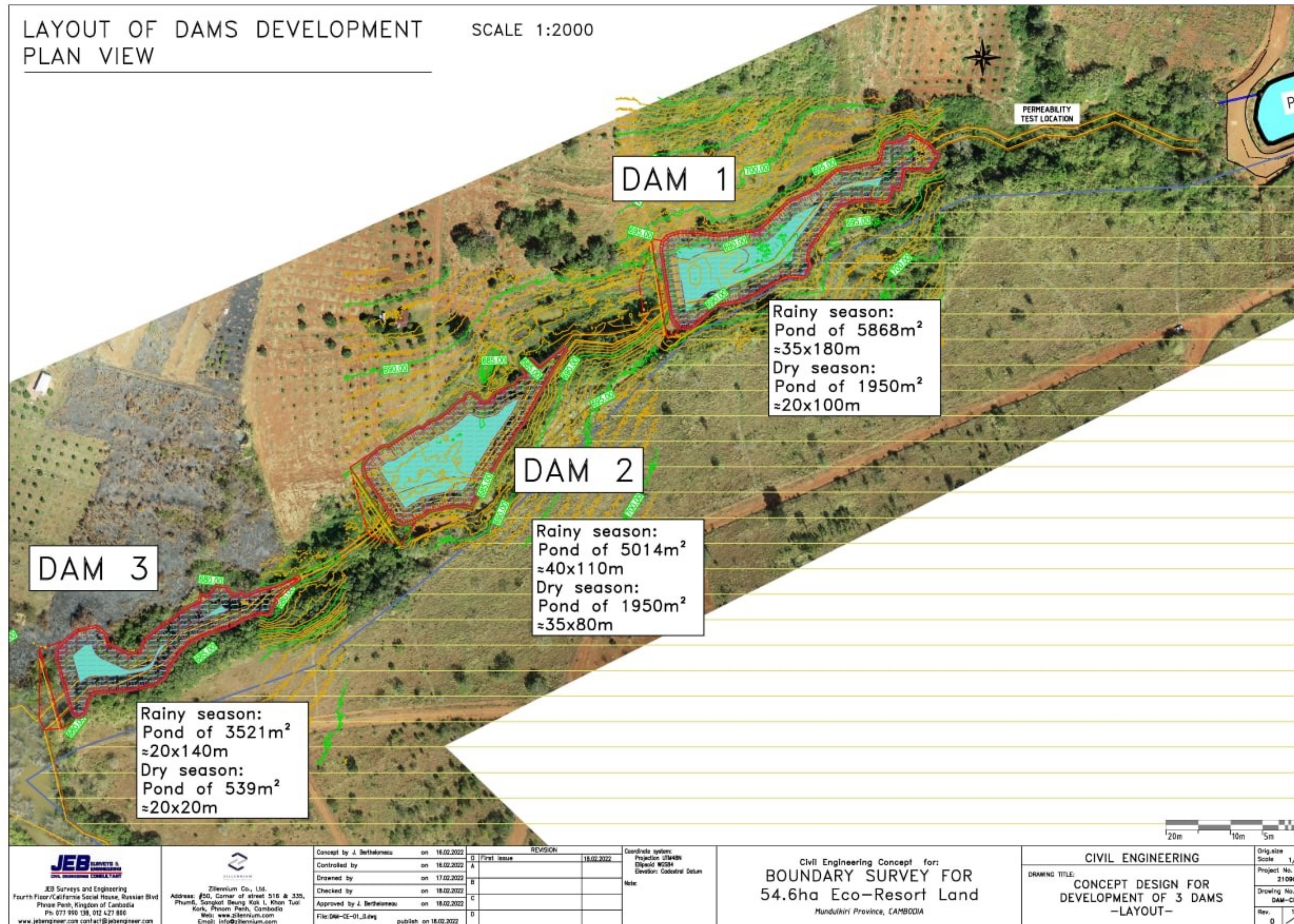
LiDAR for Archeology



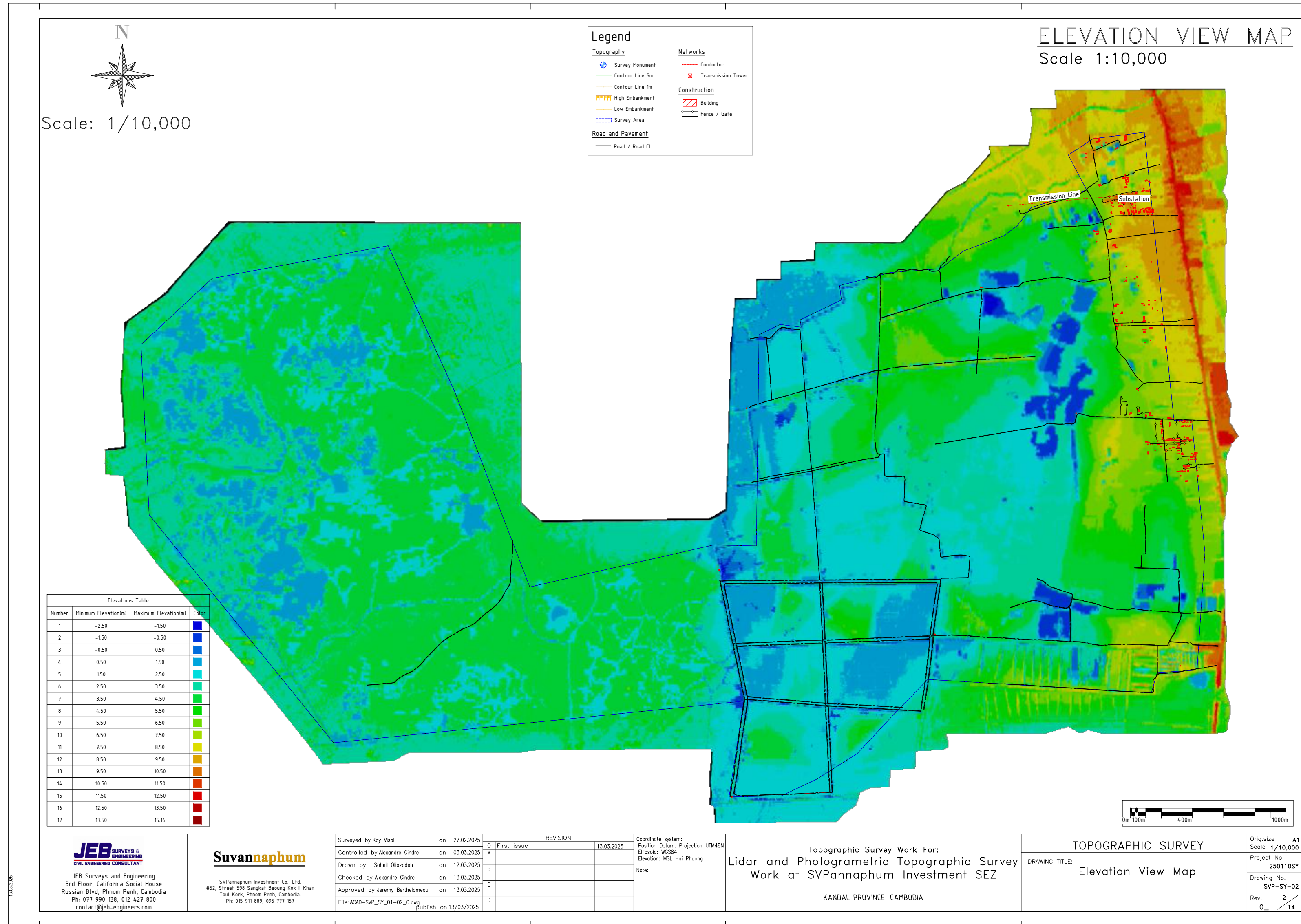
LiDAR for Forestry



LiDAR for Forestry

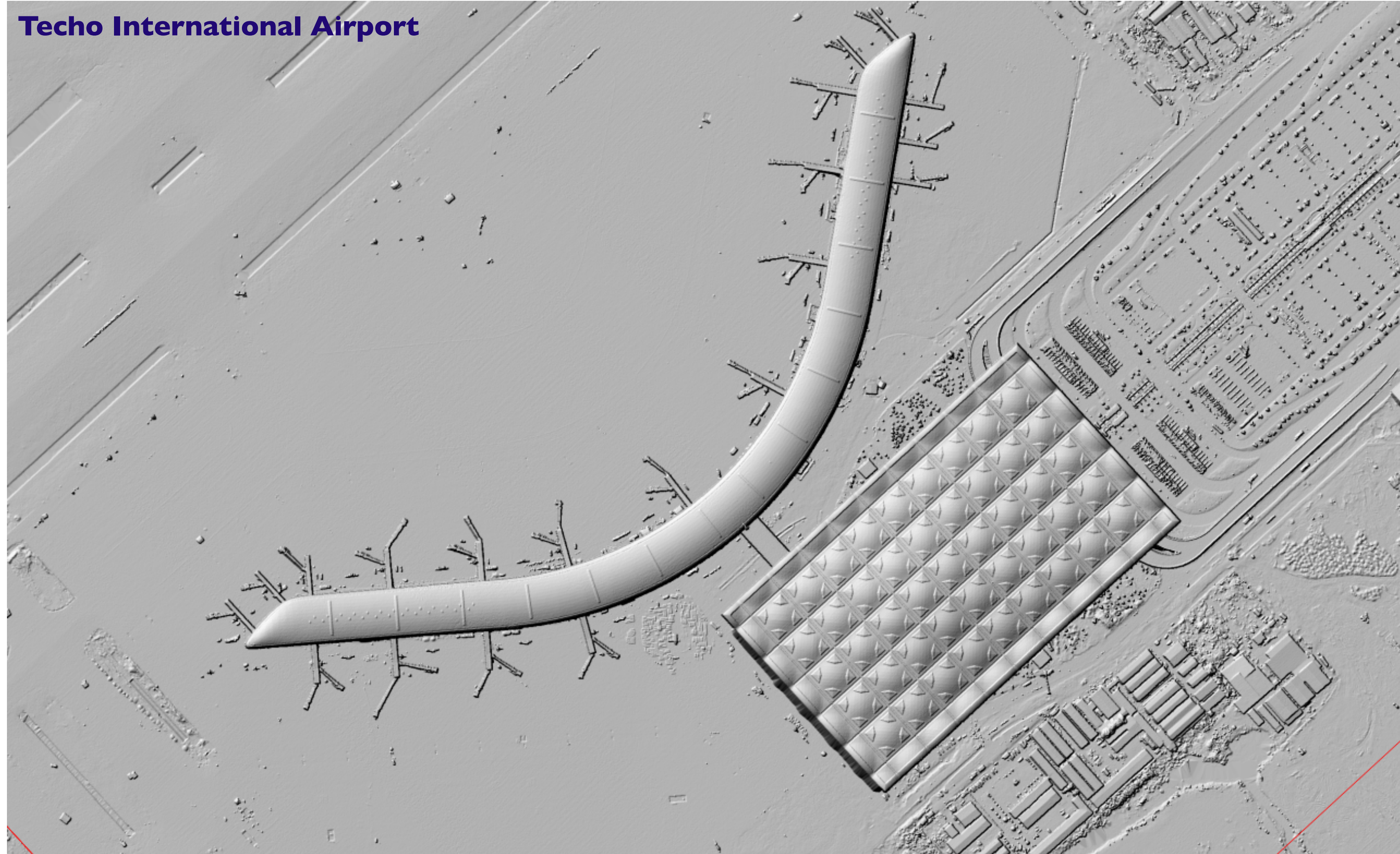


LiDAR for Water management

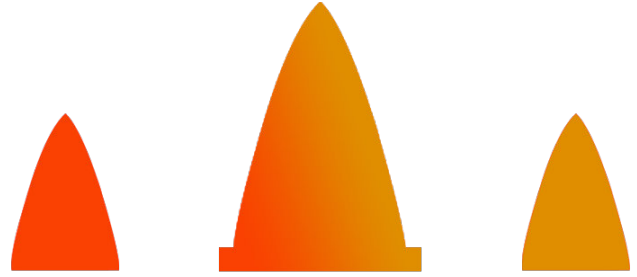


LIDAR for Water management

Techo International Airport



LiDAR for airport management



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Thanks You