



Presented at the FIG Working Week 2023,
28 May - 1 June 2023 in Orlando, Florida, USA

FIG WORKING WEEK 2023

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Protecting
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New Frontiers

A Look at NavVIS Slam Data in TopoDOT

Presented by:
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GPI Geospatial, Inc.



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SLAM Technology for Data Collection

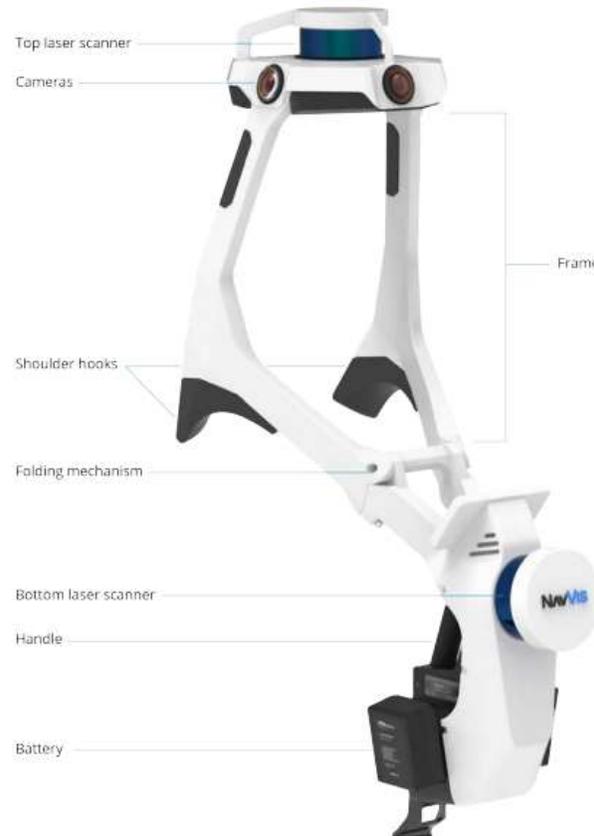


SLAM

- (S)imultaneous (L)ocalization (A)nd (M)apping
 - Group of computer algorithms that work together to map an unknown environment and locate the sensor within the scene in real-time
 - Automated registration of lidar and imagery datasets
 - recognizes common features captured in overlapping datasets in real time
 - SLAM technology fuses data from the sensors on board the platform (NavVis) to track your location as you walk through the project area
 - Well suited for indoor mapping, but also usable for outdoor areas

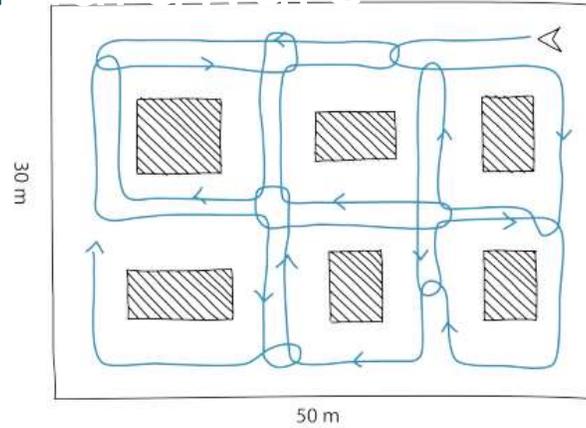
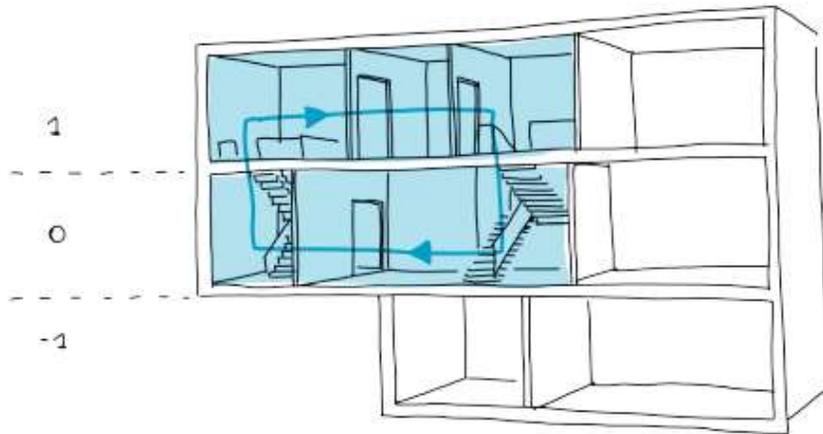
NavVis VLX Hardware

An overview of the different parts of NavVis VLX.

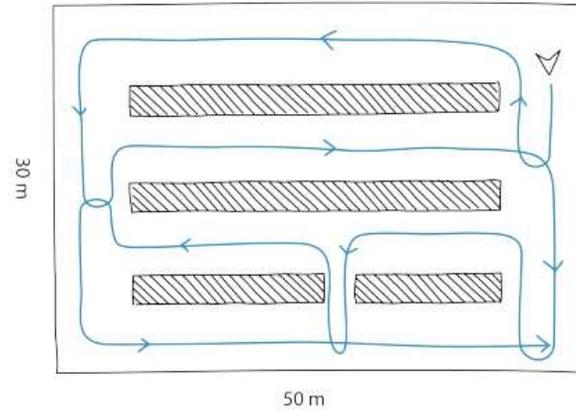


NavVis VLX Data Collection

Loop closure over multiple floors



Loop closures in corridors

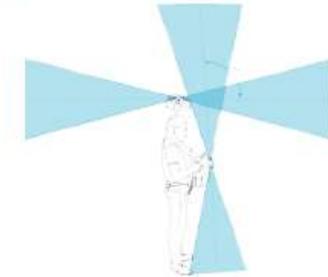


FIELD OF VIEW

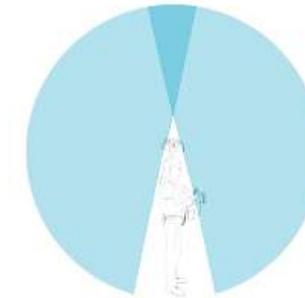
The field of view (FoV) is the area detected by the cameras and laser scanners.

IMPORTANT: Objects in the FoV will appear in the data collected by the NavVis VLX. Keep hands, arms, clothing, helmets, backpacks, and other objects out of the FoV while scanning.

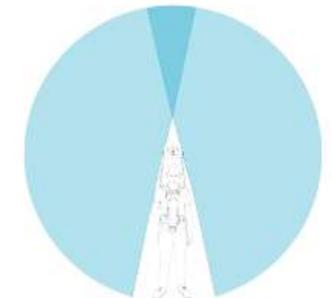
FoV: Laser scanners



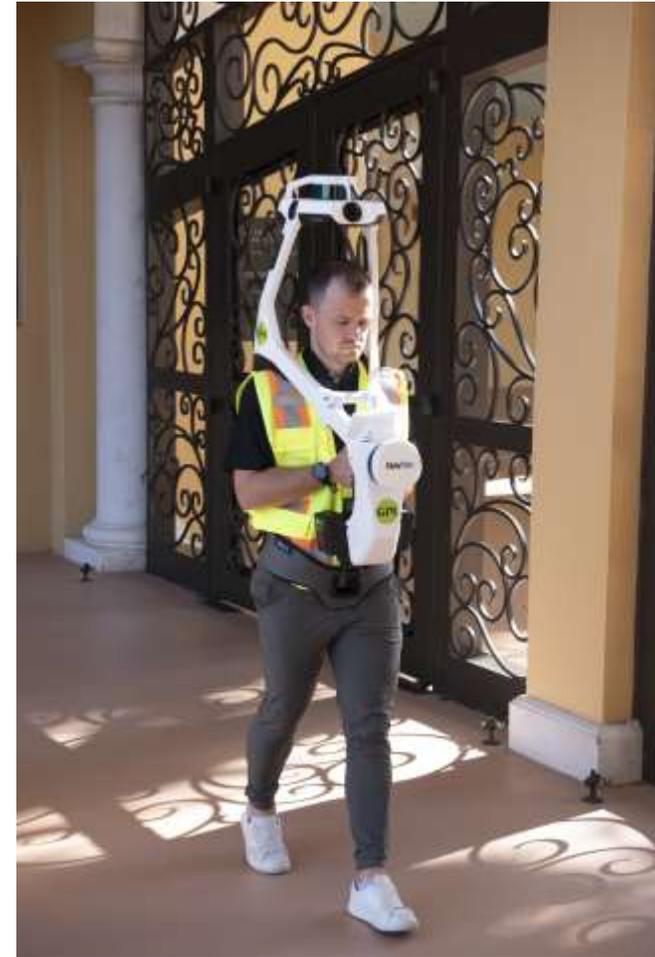
FoV: Front and back cameras



FoV: Side cameras



NavVis VLX Indoor Mapping



NavVis VLX Outdoor Mapping



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Register Survey Control



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NavVis IVION – Web-based Platform



NavVis IVION – Web-based Platform

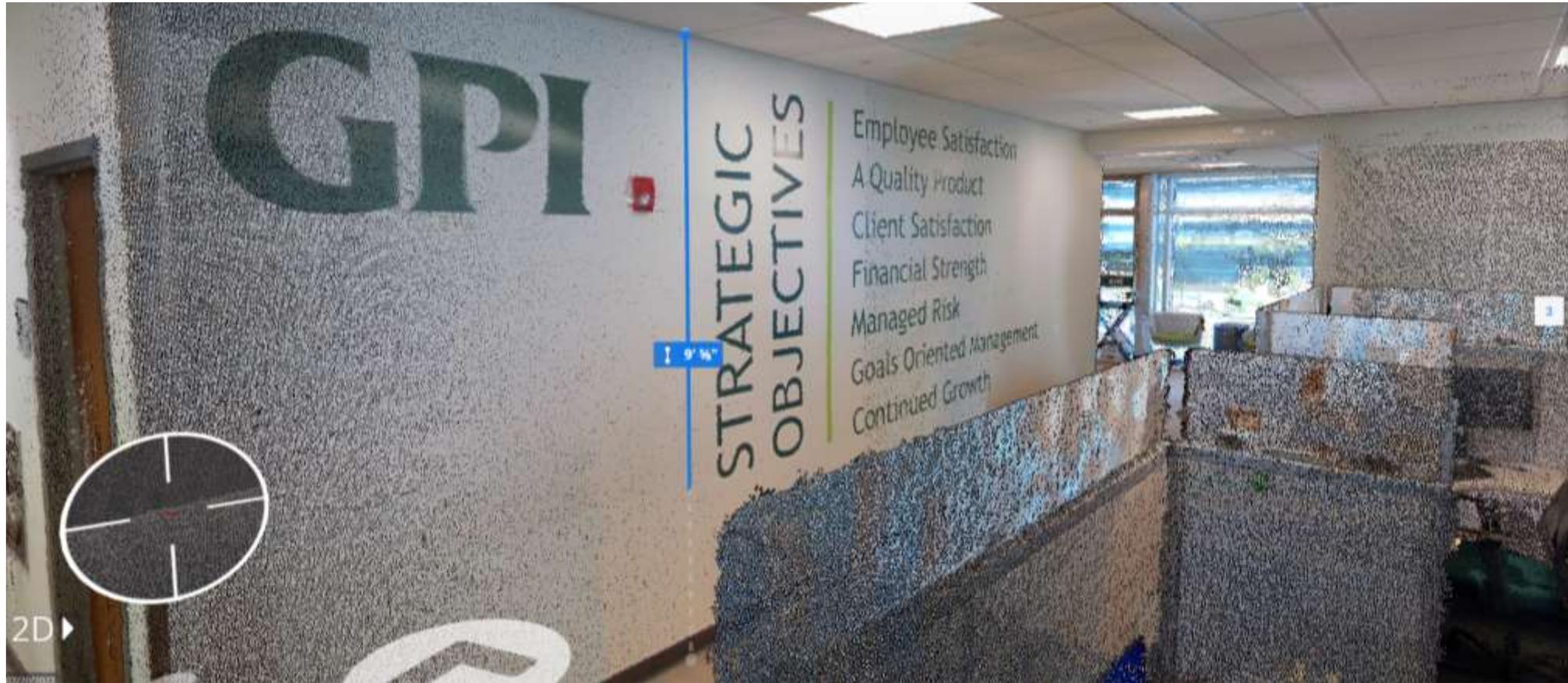


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TopoDOT Feature Extraction



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TopoDOT Feature Extraction

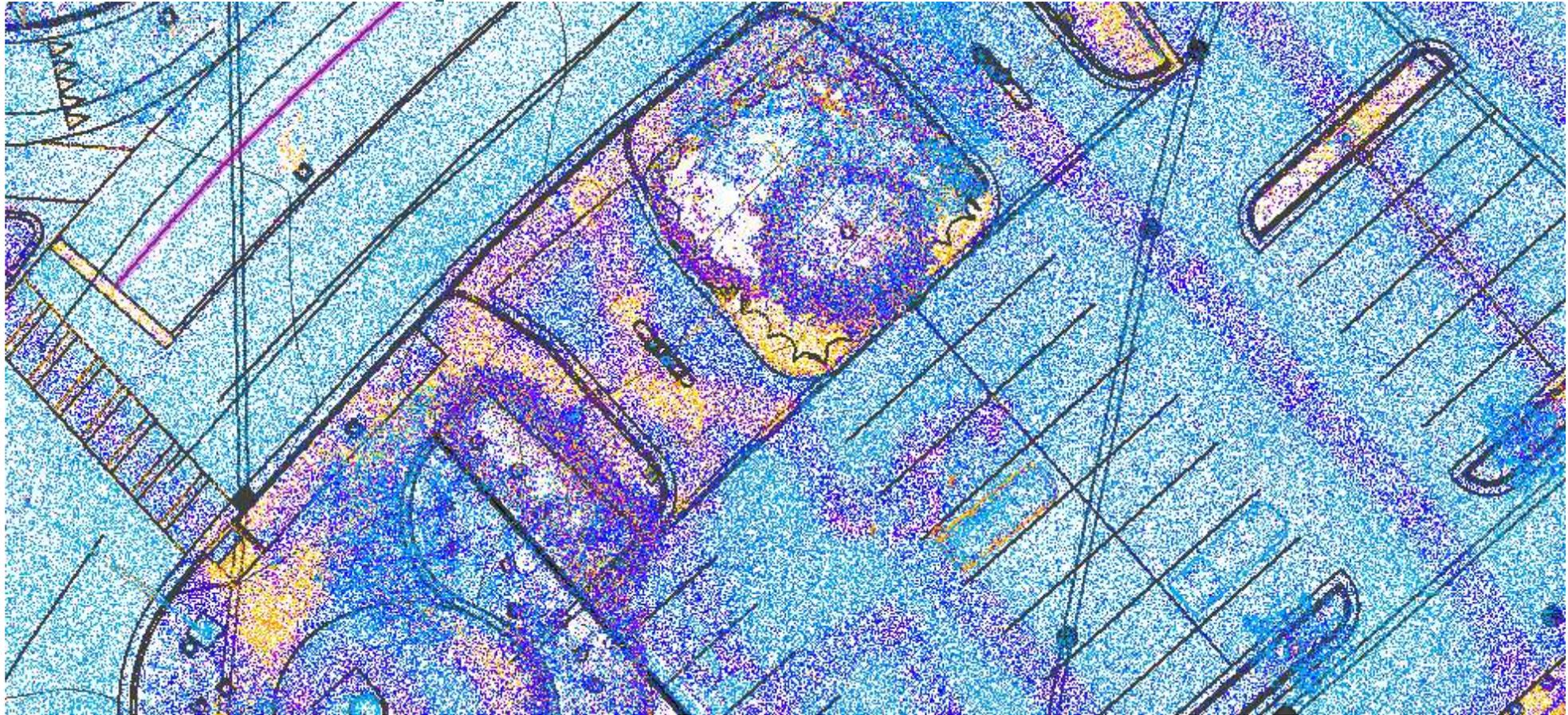


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TopoDOT Feature Extraction

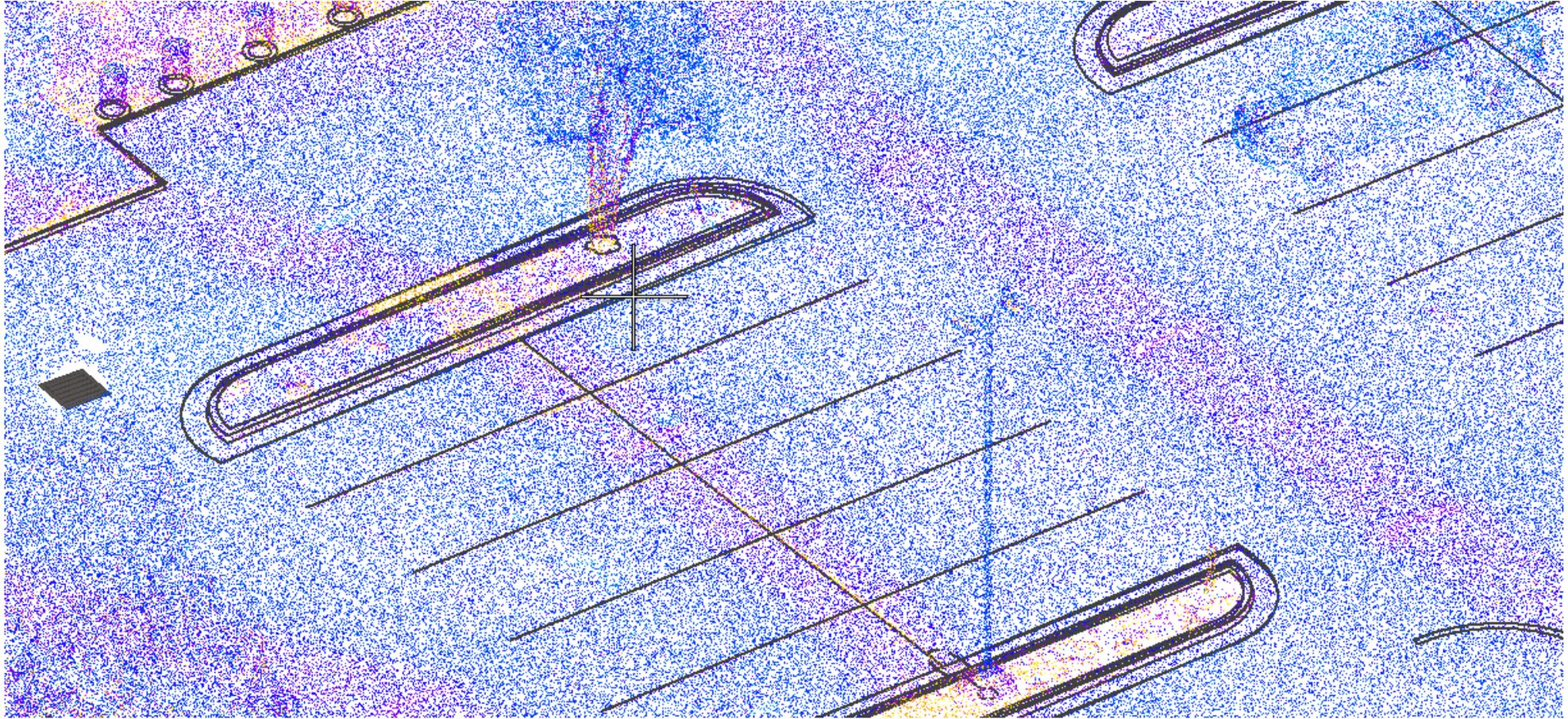




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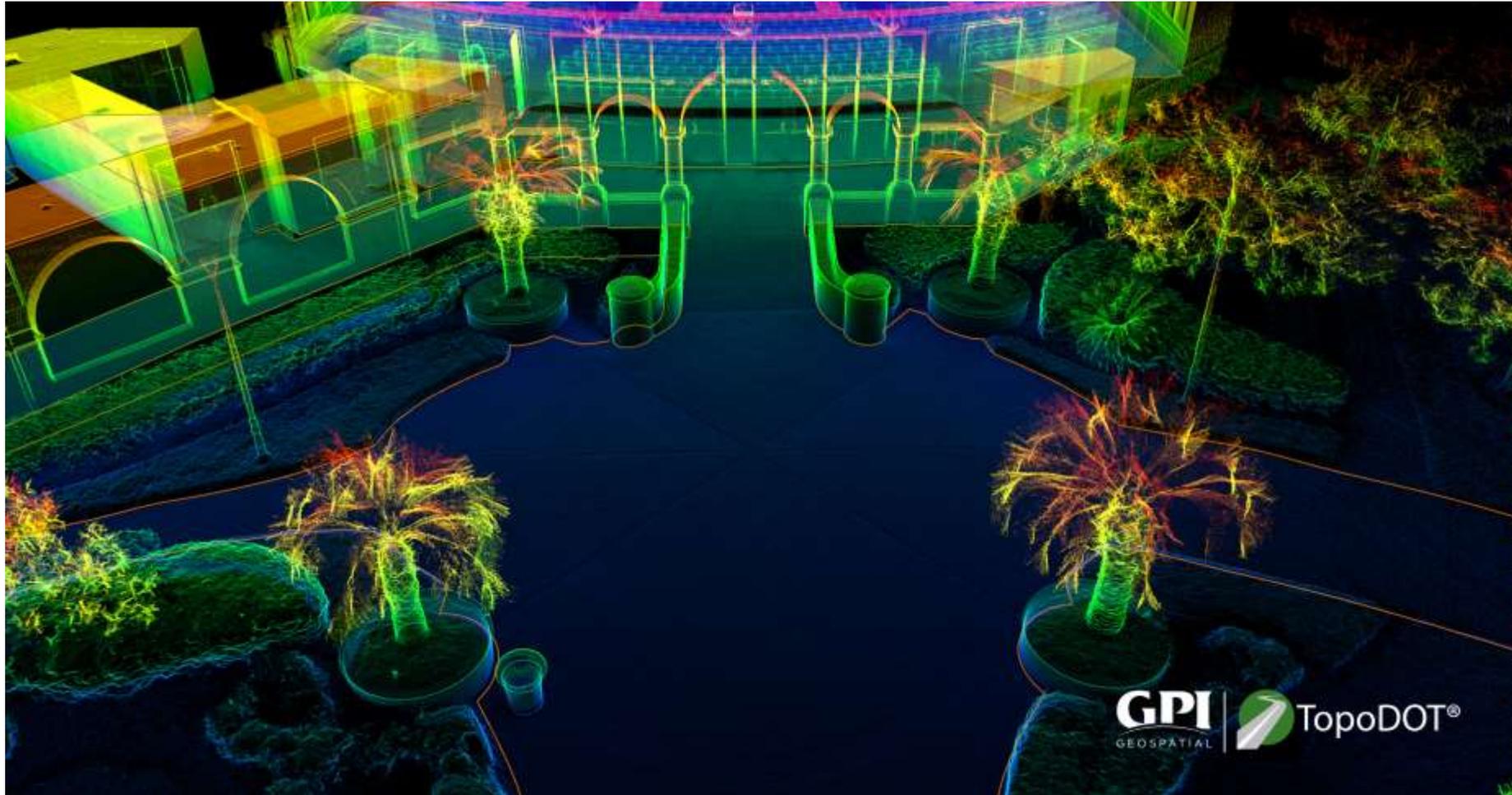




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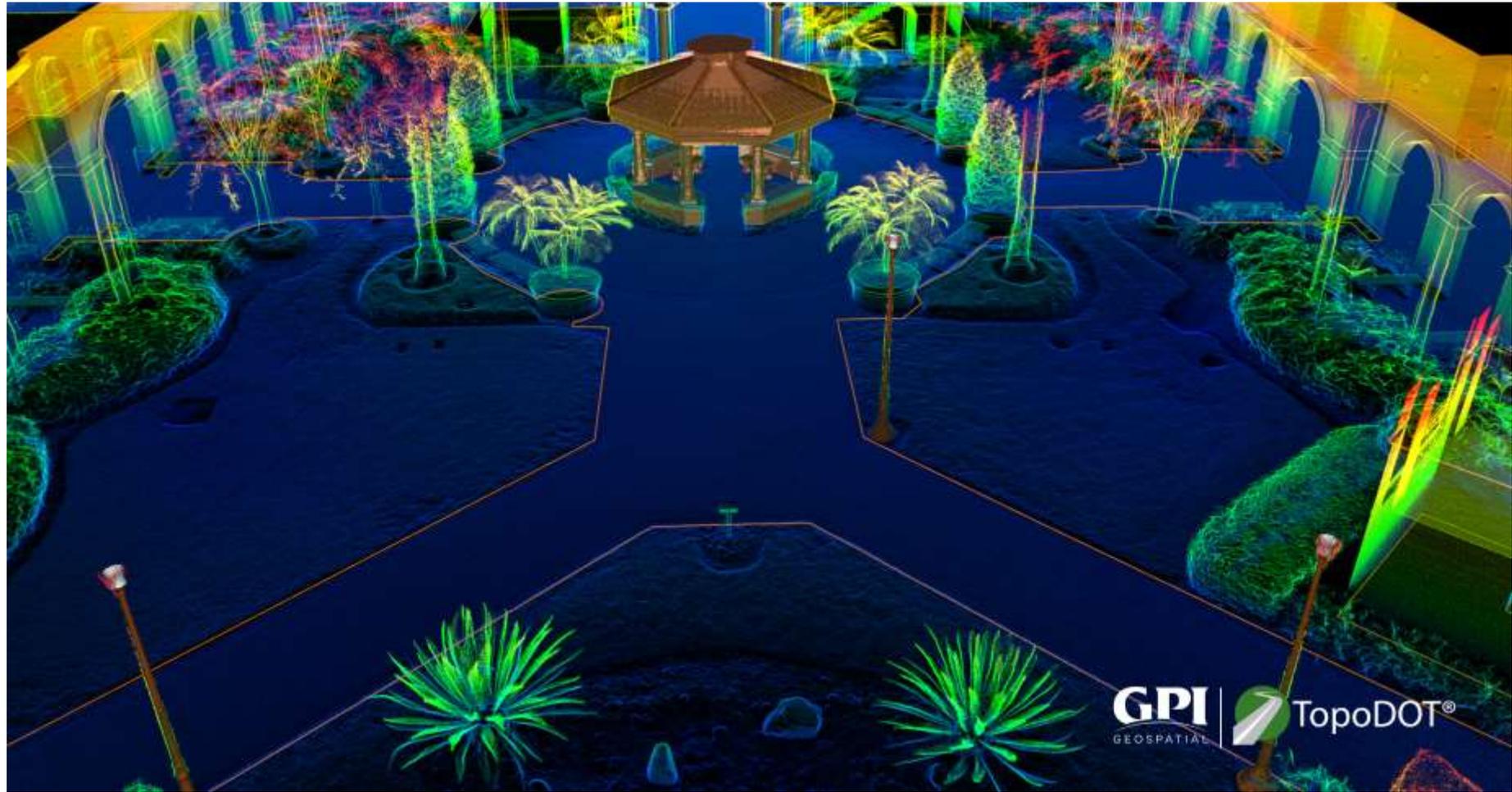
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Thank You

Visit GPI at Booth 414 for
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