Program Summary

- 14 years of celebrating excellence
- Innovative products and professional services
- Recognition Awards:
  - Honor
  - Members Choice
  - Excellence (each category)
  - Grand - Project of the Year
- Exposure and publicity
- Unbiased judging

Past Award Winners
Award Categories

- **Data Acquisition and Processing**
  - Aerial Photogrammetry, Satellite, Radar, and Airborne, Bathymetric, Mobile LiDAR

- **Surveying/Field Data Collection**
  - GPS, Terrestrial and Ground Penetrating Radar

- **GIS/IT/Remote Sensing Analysis**
  - End-user Applications, Needs Study, Custom Workflow

- **Small Projects**
  - Not exceeding $150,000 in professional services revenue

- **Technology Innovation/Licensed Data Products**
  - Sensor and new solutions from Associate Members
Awards Committee

Chairperson
Doug Ward
Aerial Data Services

Co-chair
Luke Kratky
Dowe Gallagher Aerospace, LLC.
Professional Judges

Chairman

Robert Burtch, PS, CP
Professor Emeritus of Surveying Engineering
Ferris State University

Perry Trunick
Editor
POB Magazine
Awards Ceremony

Neil Sandler
Publisher xyHt
2019 Geospatial Products and Services Excellence Awards Entries
Data Acquisition and Processing
Aerial Photogrammetry, Satellite, Radar, and Airborne, Bathymetric, Mobile LiDAR
Colorado’s outdoor beauty and natural resources abound. With tourism, economy and population growing, the Colorado Water Conservation Board leveraged 3DEP in adaptive management enabling local and federal partners plan for reducing fatalities and property loss from flooding. Merrick’s Eastern Colorado LiDAR project covered over 18,000 square miles which supported hydraulic analyses and delineating new FEMA floodplains. These data will mitigate economic impacts and human tragedy associated with future flooding, and plan for future water use.
Midwest Aerial

Airport Mapping Viewed in a Whole New Light

To fulfill the innovative vision of Wayne County Airport Authority, while simultaneously lowering costs and time required to identify and map the precise location of over 10,000 lights and signs that provide illumination and directional information for pilots at Detroit Metro Airport, Geopro Consultants and Midwest Aerial Photography provided a solution by utilizing aerial imaging technology for a heretofore unrealized purpose “Creating Data Rich Orthophotos From Imagery Collected During Low Light Conditions”.

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Positions of lights at 3 inch horizontal accuracy are auto-extracted based upon the color intensity in the dark imagery.

Dual color and embedded runway lights appear in this daylight and nighttime composite 3 cm orthometric photographic.

Cessna 310 aircraft equipped with a DMC II 140/14 bit aerial camera used to collect daylight and nighttime imagery at 5cm resolution of the airport.

Inside the cockpit of the Cessna 310 aircraft flying at a sun angle elevation of between -5 and -10 degrees.
Quantum Spatial

Klamath River - A Bathymetric Model for a Recovering River

In anticipation of the unprecedented removal of four hydroelectric facilities in 2022, USGS issued a contract to Quantum Spatial to collect and process remote sensing data over the entire length of the Klamath River. Coordinating topo-bathymetric lidar, multi-beam sonar, and multispectral imagery collection over 292 stream miles required sizeable ingenuity, and innovation. Stakeholders will use these data to model and monitor flow dynamics, connectivity, and channel characteristics as the river recovers.
The Jefferson City, Missouri, area was struck by an EF-3 tornado on May 22, 2019. Through its Statewide Contract for Photogrammetric Mapping Products and Services with Surdex, the State of Missouri developed a plan to acquire aerial data of the damage. Surdex acquired 56 square miles of 6” GSD orthoimagery and QL2 LiDAR data. Using rapid disaster mapping procedures, Surdex produced both datasets within 24 hours of acquisition, providing critical information to first responders in a timely manner.
When the Mud Creek Slide dumped 5 million cubic yards of earth onto California's iconic Highway 1 in Big Sur, the emergency-response effort that followed was nothing short of remarkable. Miraculously, nobody was hurt during the slide, and the top priority surrounding the restoration was to keep it that way. The Caltrans Office of Photogrammetry, District 5, and Towill, Inc., worked together to develop an approach to safely acquire terrain data on the unstable site.
In the wake of 2017’s devastating Hurricane Maria, WMR-532 LLC, a joint venture between MAPPS member firms Woolpert and Optimal GEO, collected topographic and bathymetric lidar, digital imagery and hyperspectral imagery data along the Puerto Rican coastline. The team deployed two CZMIL sensors on dual aircraft and performed round-the-clock data processing to support the USNCMP and JALBTCX mission to provide data and analytics for damage assessments, future impact predictions and investments in recovery and resiliency.
Surveying/Field Data Collection
GPS, Terrestrial and Ground Penetrating Radar
The Minnesota Department of Transportation (MnDOT) commissioned a statewide inventory and assessment of end terminals based on an FHWA/AASHTO study. This study identified defective guardrails and nationwide challenges with guardrail installations. MnDOT grew the project to include 19 different asset classes. Continental Mapping collected, mapped, inspected and reported on these assets resulting in 552,269 assets mapped and 96% of all end terminals having at least 1 defect and subsequently prioritized by MnDOT for correction.
The Project possesses extraordinary requirements containing complex technical criteria and addresses significant problems associated with a major highway widening project. A portion of the Turnpike’s limited-access tollway was designed to expand from six to ten lanes with variable tolled express lanes. Integrated survey products include a geodetic control network, LiDAR systems for 3D data collection, 360-degree imagery, hydrographic surveys, ground-penetrating radar, and electromagnetic surveys designating subsurface utilities to avoid conflicts with the proposed design.
GIS/IT/Remote Sensing Analysis

End-user Applications, Needs Study, Custom Workflow
ASI was tasked with georeferencing historical imagery for 59 counties in South Dakota with the goal to produce 59 countywide mosaics. During the process ASI discovered several issues that would lead them to pioneer a new process which enabled cost-effective georeferencing of historical imagery and exceeded accuracy requirements by 2x. With this new process we can gain a better understanding of our land and environmental and economic impacts for a diverse range of applications.
The Trans Alaska Pipeline System is managed by the Alyeska Pipeline Service Company and is critical to Alaska’s economy and US oil independence. Alyeska’s diligence ensures pipeline integrity while being stewards of Alaska’s environment and personnel safety. Merrick’s innovative multi-angled sensor modeled over 78,000 Vertical Support Members enabling monitoring potential impacts caused by changing climate and permafrost. The airborne was more cost effective and lowered the project risk profile compared to traditional field survey monitoring.
Using the DC Metropolitan area as a test pilot, Quantum Spatial formulated an innovative methodology for updating the current National Hydrography Database and Watershed Boundary Dataset by integrating high-resolution lidar data as well as city-maintained GIS layers depicting subsurface water drainage. The analysis and updated datasets will allow for more effective water management and urban planning in DC, contributing also to the larger National Hydrography Infrastructure initiative of the US Geological Survey.
Technology Innovation/
Licensed Data Products
Sensor and New Solutions from Associate Members
Both unmanned and airborne data collects have their own merits that have been clearly established and are highly beneficial to a multitude of industries. However, it became critical that a solution was needed that would encompass the middle ground between UAV projects and airborne projects that could be used on an array of aerial platforms. With this, the RIEGL VUX-240 lightweight airborne laser scanner was developed and released into the market.
Teledyne Optech

NEW G2 Airborne Lidar Sensor System

Project to address the demand for maximum collection efficiency when collecting and delivering to USGS 3DEP task orders, but with option to separate the sensors and operate them independently on smaller jobs.

Objectives:
1. Successful installation and operation of two sensors as if they were one, over a single 19” aircraft sensor portal
2. Scan geometry that enables pressurized installation
3. Scan geometry that improves vertical density on object sides
4. Scan geometry that enables superior vegetation penetration for enhanced ground detection
5. Fully coincident data streams such that there is no perceptible difference in the aggregated data output
6. Aggregate data accuracy that exceeds QL1 and QL2 accuracy requirements
A smart assistant for mapping leases and deeds described by metes and bounds which have traditionally been laboriously mapped by hand. WhiteStar Legal Mapper (or WLM) is also capable of mapping legal descriptions described in terms of subdivision of the public land survey. WLM has the unique capability to take scanned deed or free form text from a database as input, to highlight the compass bearings and distances described, and allow the user to quickly populate an editable data structure from which the final polygon is constructed.
Celebrating Technical Excellence

2019 Geospatial Products and Services Excellence Awards

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