

# Agenda

Presented by: Mark D. Jones, P.E.

## Aerial Mapping Program Overview

### UAS-Drone Platforms

- Types of UAS/sUAS platforms
- Uses of drone technology
- Cameras
- UAS costs

### UAS Mapping Principles

- General aerial photography
- Ortho-photos
- Photogrammetry
- Terrain modeling
- 3D models
- LiDAR point clouds and scanning
- GIS dataset acquisition

### History and Development of the UAS Platforms

### UAS Photogrammetry – Principles and Procedures

- Photogrammetry basics
- GPS and coordinate systems
- Data georeferencing
- Survey control
- Data acquisition
- Post processing and adjustments

### Post Processing – Software Applications

- Basic data requirements
- Computer hardware
- Commercial software applications
  - Pix4D
  - DroneDeploy
  - AutoDesk
  - Others

### Demonstration of Small Photogrammetry Project

- Live demonstration of a small project using Pix4D

### FAA Commercial UAS Regulations

- Commercial use activities
- FAA Part 107 licensing requirements
- Flight regulations for UAS
- Airspace restrictions

### FAA Knowledge Test – General Overview

- Primer on the FAA Part 107 knowledge test
- Knowledge test areas of study
- Do I need to be a pilot?
- General do's and don'ts of UAS operations
- Commercial operator liability considerations

**Aerial Mapping: Technologies and Procedures**  
White Plains, NY - Friday, October 19, 2018



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## Learning Objectives

### You'll be able to:

**Explore** unmanned aircraft system (UAS), or drone, platforms.

**Discuss** the use of UAS for aerial photography, ortho-photos, terrain modeling, 3-D models and LiDAR.

**Examine** UAS photogrammetry principles and procedures.

**Review** commercial software, including Pix4D, DroneDeploy and AutoDesk.

**Review** FAA UAS regulations and get a primer on the FAA Part 107 knowledge test.



# Aerial Mapping: Technologies and Procedures

White Plains, NY - Friday, October 19, 2018



**Discuss** the use of unmanned aircraft systems (UAS), or drones, for general aerial photography, terrain modeling, 3D models, LiDAR and GIS dataset acquisition

**Explore** procedures for UAS use for photogrammetry

**Review** commercial software applications, including Pix4D, DroneDeploy and AutoDesk

**Examine** FAA commercial UAS regulations

**See** a demonstration of a small photogrammetry project

### Continuing Education Credits

**Professional Engineers and Land Surveyors**  
6.5 Continuing Ed. Hours

# Faculty

**Mark D. Jones, P.E.** Principal, Hartech Engineering & Consulting, LLC

Mr. Jones, P.E., is president of Hartech Engineering, which was founded in 2007 as a multi-discipline civil engineering consulting firm providing infrastructure, development and municipal design services for the public and private sectors. Bringing over 30 years of engineering expertise along with specific state-of-the-art, computer-aided technology to achieve efficient, cost saving design solutions, he also provides hydrology and hydraulic studies and reports along with general civil engineering support for prime consultants to PennDOT or local municipality projects. Mr. Jones is a licensed pilot and studied Military Civil Engineering while serving in the USAF and continues his masters education locally through Penn State. Additionally, he is also a registered professional engineer in the states of Pennsylvania, Maryland, Arizona and Georgia.

## Here's what past attendees had to say about the program and presenter Mark Jones:

“Loved the seminar!” – CAD Designer

“Very informative & useful course for mapping with drones. Covers basics to mission accomplishment.” – Land Surveyor and Professional Engineer

“Mark is very knowledgeable of material he presented. He also had a very good delivery & ability to teach. Open format for audience questions was very helpful.”

–Civil Engineering/Land Surveying/Architecture

# Seminar Information

## Crowne Plaza White Plains

66 Hale Avenue  
White Plains, NY 10601  
(914) 682-0050

Registration	Lunch (On your own)
8:00 - 8:30 am	12:00 - 1:00 pm
Morning Session	Afternoon Session
8:30 am - 12:00 pm	1:00 - 4:30 pm

## Tuition

**\$279** for individual registration

**\$259** for three or more simultaneous registrations.

Each registration includes a complementary continental breakfast and printed seminar manual.

## How to Register

- Visit us online at [www.halfmoonseminars.org](http://www.halfmoonseminars.org)
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

**Cancellations:** Cancel at least 48 hours before the start of the seminar (CDT), and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar. You may also send another person to take your place.

# Additional Learning

## Webinar Series

### Community Solar and Rooftop Solar

- **Community Solar**  
Wed., Sept. 5, 2018, 11:00 AM - 2:15 PM CDT
- **Design Your Solar Roof**  
Thurs., Sept. 6, 2018, 11:00 AM - 2:15 PM CDT

### Seismic Design and Construction

- **Seismology and Building Codes**  
Wed., Sept. 12, 2018, 11:00 AM - 3:30 PM CDT
- **Seismic Design of Building Structures**  
Thurs., Sept. 13, 2018, 11:00 AM - 3:30 PM CDT

### Small Wind Energy Systems

- **Small Wind Energy System Components**  
Thurs., Sept. 20, 2018, 11:00 AM - 1:00 PM CDT
- **Small Wind Energy Siting and Sizing**  
Fri., Sept. 21, 2018, 11:00 AM - 1:00 PM CDT

For more information

and other online learning opportunities visit:

[www.halfmoonseminars.org/webinars/](http://www.halfmoonseminars.org/webinars/)

## Continuing Education Credit Information

This seminar is open to the public and offers up to 6.5 continuing education hours to professional engineers in all states and 6.5 PDHs to professional land surveyors in most states, including New York.

HalfMoon Education is approved by New York State Board for Engineering and Land Surveying as a continuing education provider for engineers and land surveyors (NYSED Sponsor No. 35).

HalfMoon Education is an approved continuing education sponsor for professional land surveyors and engineers in Indiana, Maryland, North Carolina, and North Dakota. HalfMoon Education is also an approved education provider for Florida and New Jersey engineers (Approval No. 24GP00000700).

Attendance will be monitored, and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

### International Green Construction Code

- **Introduction to the International Green Construction Code (IgCC)**  
Thurs., Sept. 20, 2018, 11:00 AM - 12:30 PM CDT
- **Chapters 4-5: Site Development and Material Use**  
Thurs., Sept. 20, 2018, 1:00 - 2:30 PM CDT
- **Chapters 6-9: Energy, Water, Environmental Quality and Building Commissioning**  
Fri., Sept. 21, 2018, 11:00 AM - 12:30 PM CDT
- **Chapters 10-11: Existing Buildings**  
Fri., Sept. 21, 2018, 1:00 - 2:30 PM CDT

### Slope Stabilization and Landslide Prevention

- **Analyzing the Stability of Slopes**  
Tues., Sept. 25, 2018, 11:00 AM - 2:15 PM CDT
- **Slope Stabilization Methods**  
Thurs., Sept. 27, 2018, 11:00 AM - 2:15 PM CDT

# Registration

## Aerial Mapping: *Technologies and Procedures*

White Plains, NY - Friday, October 19, 2018

How to Register		Registrant Information
<b>Online:</b> <a href="http://www.halfmoonseminars.org">www.halfmoonseminars.org</a>		Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip: _____ Occupation: _____ Email: _____ Phone: _____
<b>Phone:</b> 715-835-5900		<b>Additional Registrants:</b> Name: _____ Occupation: _____ Email: _____ Phone: _____
<b>Fax:</b> 715-835-6066		Name: _____ Occupation: _____ Email: _____ Phone: _____
<b>Mail:</b> HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278		Name: _____ Occupation: _____ Email: _____ Phone: _____
<b>Complete the entire form.</b> Attach duplicates if necessary.		Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.
( )  I need special accommodations. Please contact me.		

Tuition
( ) <b>I will be attending the live seminar.</b> Single Registrant - <b>\$279.00</b> . Three or more registrants from the same company registering at the same time - <b>\$259.00</b> each.
<b>Checks:</b> Make payable to HalfMoon Education Inc.
<b>Credit Card:</b> <i>Mastercard, Visa, American Express, or Discover</i>
Credit Card Number: _____
Expiration Date: _____ CVV2 Code: _____
Cardholder Name: _____
Billing Address: _____
City: _____ State: _____ Zip: _____
Signature: _____
Email: _____