

Agenda

Presented by Paul Wheeler

Introductions

FAA Commercial UAS Regulations

Purpose
Commercial/recreational UAS

FAA Part 107 Remote Pilot License

How to obtain a license Part 107 rules
Resources to comply with 107
Resources to prepare for test
Locations for testing LAANC, waivers, and COA
Best practices for waiver approval
Airspace Airport traffic
Aviation weather Liability

Overview of Aerial Mapping Technologies

Manned aircraft vs. unmanned
UAS photogrammetry LiDAR
Photogrammetry vs. LiDAR

UAS Photogrammetry

What can I expect to achieve using UAS photogrammetry?
Strengths and weaknesses of UAS photogrammetry
Best practices for achieving good deliverables

UAS Platforms

Strengths and weaknesses of UAS platforms
Fixed wing Rotorcraft

Mapping Using UAS

GPS Equipment – understanding consumer, RTK, and PPK
Ground control points Preflight planning
Flight mapping software Flight operations and considerations
Post-flight review

Post Processing Software Applications

Application overview Post processing in cloud vs. local hardware

Photogrammetry Demonstration/Case Study

Pix4D interactive demonstration

Data Use Cases

Traditional vs point cloud Camera angles
Hybrid method to achieve the highest quality deliverable
Quality control and assurance of data

Aerial Mapping Technologies and Procedures

Denver, CO - Friday, March 13, 2020



HalfMoon Education Inc.
PO Box 278
Altoona, WI 54720-0278

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Learning Objectives

You'll be able to:

Learn about the use of unmanned aircraft systems(UAS) for photogrammetry and LiDAR.

Explore UAS fixed-wing and rotorcraft platforms.

Discuss preflight planning and flight operations.

Examine best practices for achieving good data.

Review a Pix4D photogrammetry demonstration/case study.

Study FAA commercial UAS regulations.



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Explore UAS platforms and mapping software, flight operations and considerations

Examine best practices for achieving good data

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Study FAA commercial UAS regulations

Continuing Education Credits

**Professional Engineers,
Professional Land Surveyors
& Geologists**

7.0 Continuing Education Hours*

* CE is not required in Colorado



HalfMoon Education Inc.
WWW.HALFMOONSEMINARS.ORG

Faculty

Paul Wheeler *Utah Department of Transportation*

Mr. Wheeler is the Unmanned Aerial Systems Program Manager at the Utah Department of Transportation. He is an instrument-rated pilot and serves on multiple national committees to help foster innovation through the use of unmanned aerial systems (UAS). He was named one of the top seven drone visionaries in civil infrastructure by Commercial UAV Expo and is an internationally recognized speaker and innovator for UAS technologies.

Here's what attendees had to say about presenter Paul Wheeler:

"Mr. Wheeler was well prepared and am excellent instructor!" - *Civil Engineer*

"Coming from a different background I have a much better understanding.

- *Analyst/Drone Pilot*

"Very useful information- extremely knowledgeable and answered questions with ease."

- *Civil Engineer*

"Excellent seminar! Paul was willing to answer questions and provide suggestions."

- *Land Surveyor*

Seminar Information

Renaissance Denver Stapleton Hotel

3801 Quebec Street
Denver, CO 80207
(303) 399-7500

Registration

8:00 - 8:30 am
Morning Session
8:30 am - 12:30 pm

Lunch (On your own)

12:30 - 1:30 pm
Afternoon Session
1:30 - 5:00 pm

Tuition

\$299 for individual registration

\$279 for three or more simultaneous registrations.

Included with your registration:

Complimentary continental breakfast and printed seminar manual.

Receive a reduced tuition rate of \$101 by registering to be our on-site coordinator for the day.

For availability and job description, please visit www.halfmoonseminars.org.

How to Register

- Visit us online at 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, 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 or the self-study package. You may also send another person to take your place.

Additional Learning

Webinar Series

Foundations in Cold Regions

- **Introduction to Foundations in Cold Regions**
Thurs., Feb. 20, 2020, 11:00 AM - 12:30 PM CST
- **Shallow Foundation Design in Cold Regions**
Thurs., Feb. 20, 2020, 1:00 - 2:30 PM CST
- **Deep Foundation Design in Cold Regions**
Fri., Feb. 21, 2020, 11:00 AM - 12:30 PM CST
- **Foundation Construction in Cold Regions**
Fri., Feb. 21, 2020, 1:00 - 2:00 PM CST

Soil Mechanics and Slope Stability

- **Soil Investigation and Classification**
Tues., Feb. 25, 2020, 11:00 AM - 1:00 PM CST
- **Reviewing Hydraulic and Mechanical Properties of Soils**
Tues., Feb. 25, 2020, 1:30 - 3:00 PM CST
- **Determining and Increasing Bearing Capacity**
Wed., Feb. 26, 2020, 11:00 AM - 1:00 PM CST
- **Determining and Increasing Slope Stability**
Wed., Feb. 26, 2020, 1:30 - 3:00 PM CST

Continuing Education Credit Information

This course is open to the public and offers 7.0 continuing education hours/PDHs to professional engineers in all states. Continuing education is not required to maintain a license in Colorado.

This seminar offers 7.0 continuing education hours/PDHs to professional land surveys in most states. HalfMoon Education has not sought approval from states that require preapproval of continuing education courses. Continuing education is not required to maintain a license in Colorado.

HalfMoon Education is an approved continuing education sponsor for engineers licensed in Florida, Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700), North Carolina, and North Dakota. HalfMoon Education is deemed an approved CE provider for engineers and land surveyors licensed in New York.

This event offers 7.0 non-credit continuing education hours to geologists.

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.

Can't Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!

Audio recordings of this seminar are available for purchase starting at \$279. See registration panel for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

Designing for Climate Resilience

- **Current and Anticipated Climate Effects on Structures and Communities**
Thurs., Feb. 27, 2020, 11:00 AM - 12:30 PM CST
- **Assessing the Impact of Sea Level Rise, Changing Temperature and Changing Weather Patterns**
Thurs., Feb. 27, 2020, 1:00 - 3:00 PM CST
- **Studying the Impact of Extreme Weather Events on Structures and Communities**
Fri., Feb. 28, 2020, 11:00 AM - 12:30 PM CST
- **Adapting Sites, Outdoor Spaces, New Construction and Existing Buildings to Withstand Extreme Weather Events**
Fri., Feb. 28, 2020, 1:00 - 3:00 PM CST

For more information and other online learning opportunities visit: www.halfmoonseminars.org/webinars/

Registration

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How to Register

Online:
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Phone:
715-835-5900

Fax:
715-835-6066

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PO Box 278, Altoona, WI
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Complete the entire form. Attach duplicates if necessary.

Registrant Information

Name: _____
Company/Firm: _____
Address: _____
City: _____ State: _____ Zip: _____
Occupation: _____
Email: _____
Phone: _____

Additional Registrants:

Name: _____
Occupation: _____
Email: _____
Phone: _____
Name: _____
Occupation: _____
Email: _____
Phone: _____

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

() **I will be attending the live seminar.** Single Registrant - **\$299.00**. Three or more registrants from the same company registering at the same time - **\$279.00** each.

() **I am not attending.** Please send me the self-study package:

- Downloadable MP3 Audio/PDF Manual for **\$279.00**.
 CD/Manual Package for **\$299.00**. USB/Manual Package **\$299.00**.
(S&H included. Please allow five weeks from seminar date for delivery)

Checks: Make payable to HalfMoon Education Inc.

Credit Card: *Mastercard, Visa, American Express, or Discover*

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