

Phantom Operator Certification Training – Level II

COURSE DESCRIPTION

The Level 2 certification course has been designed to provide students with the ability to use the advanced features and options incorporated in a Phantom camera. It provides various networking choices to synchronize multiple cameras to record several angle views of an event. This course will supply analyst with the tools necessary to utilize the 'easy-to-use' measurement tools incorporated in our PCC software. In addition, it will detail the various methods used to control a Phantom camera.

WHO SHOULD ATTEND

Operators who have basic knowledge and experience in recording high speed events, and technicians required to install, the Phantom cameras and their peripherals.

COURSE BENEFITS

Upon completion of the both Level I and II Phantom Operator Certification courses, the student will:

- Be recognized as a Factory Authorized and trained Phantom Technician and added to the Vision Research Global List of available Phantom technicians supporting Phantom cameras
- Receive a 25% discount on future / advanced training sessions
- Receive one-time access to a Rental camera at 75% off of a one-week rental within 60 days of successfully completing the certification training
- Gain access to:
 - Online User Group
 - Rental Technical Support opportunities within your region
 - Refurbished and rental camera Discount Program providing:
 - Up to 40% off rentals (Standard and Premier Level discounts (35% / 50%) (differentiated by frequency of rentals)
 - Up to 35% of Refurbished Phantom cameras (Standard – 25%, Premier Level 35%)

PREREQUISITE

- Photography principles knowledge and practical experience
- Microsoft Windows utilization and file manipulation
- Working knowledge to capture, edit, and save a Phantom Camera Cine clip using PCC

REQUIRED COURSE MATERIALS

Textbook – Vision Research will supply each student with a copy of the Phantom Operator Certification Training Level 2 Student Manual.

Supplies – The latest revision of PCC (Phantom Camera Control) software will be supplied to you by Vision Research for installation onto your laptop during class.

Technology – You will need a laptop computer with one of the following Operating Systems installed; Microsoft Windows 7 (32 or 64 Bit); Microsoft Windows 8.1 (32 or 64 Bit); Microsoft Windows 10 (32 or 64 Bit). The laptop must have Administrative Privileges enabled.

COURSE STRUCTURE

Lecture:65 %: Exercise Work: 35%

STUDENT LEARNING OUTCOMES

This course is intended to improve the students' knowledge and skills to gain and demonstrate proficiency in high-speed imaging. Only an earnest effort and hours of practice outside of the classroom can bring about significant improvement. After completing this course the student will be able to:

1. Describe the benefits of digital high-speed imaging versus traditional photography / videography.
2. Perform Timing Measurements and Motion Analysis.
3. Generate and Review Measurement Reports.
4. Synchronize multiple networked Phantom cameras using a variety of frame clock sources.
5. Create Camera / Cine Groups.
6. Review multiple Cine clips synchronously.
7. Describe other methods to control a Phantom camera.

COURSE SCHEDULE

During this one-day course, the time allocated to each module is flexible within a short time range (typically 10 to 30 minutes). When deciding on the duration of modules, consideration will be given to:

- the time required to achieve outcomes
- the level to which outcomes will be achieved
- the extent to which content in modules will be explored

Estimated Time	Module / Lesson
(8:30 – 9:00)	Welcome Introductions, and Registration Module 2 Features and Options
(9:00 – 9:30)	Exercise 1: Low Light and Bit Depth
(9:30 – 10:00)	Exercise 2: Auto Exposure
(10:00 – 11:00)	Exercise 3: Image-Based Auto-Trigger (IBAT)
(11:00 – 12:00)	Exercise 4: Partitions (aka MultiCine) Partitioning the Memory Mirroring the Recording Parameters Managing Partitions Saving Partition Image Data Save Cine to File Save All RAM Cines to File Select&Save Cines to File

(12:00 – 1:00)	Lunch
(1:00 – 1:30)	Exercise 5: Continuous Recording (Native Mode)
(1:30 – 1:50)	Exercise 6: Continuous Recording with Partitions and Image-Based Auto-Trigger
(1:50 – 2:10)	Exercise 7: Continuous Recording with Auto-Trigger and Image Range
(2:10 – 2:30)	Flash Memory <ul style="list-style-type: none"> Manual Save to Flash Auto Save to Flash Direct Recording to CineMag Erase Flash Memory
(2:30 – 2:50)	Range Data / DAQ Signal Acquisition
(2:50 – 3:00)	Exposure in PIV (Particle Image Velocimetry) Mode
(3:00 – 3:10)	Burst Mode
(3:10 – 3:20)	Versatile Dual HD-SDI
(3:20 – 4:00)	Module 3 Exercise 8: Measurements <ul style="list-style-type: none"> Optimizing Images for Analysis Timing Measurements Defining the Measurement Units Calibrating a Measurement Scale Coordinate Measurements Distance & Angle & Speed: Origin + 1Point Distance & Angle & Speed: 2Points Angle & Angular Speed: 3Points Angle & Angular Speed: 4Points Point Tracking
(4:00 – 4:45)	Module 4 Exercise 9: Synchronization <ul style="list-style-type: none"> Frame Synchronization (F-sync) Timing Methods Synchronizing Multiple Networked Cameras
(4:45 – 5:00)	Wrap Up

EVALUATION / GRADING:

The following categories will be utilized in the program evaluation methodology.

Reaction (learner satisfaction) – The response of the learners after finishing with the course is a measurable action. Success is achieved when most of the audience responds positively to the course.

Learning (testing and competence) –In addition to the success on the workshop assignments all of the practices and assessments included in the course will serve to measure learning.

Behavior (on-the-job application) –Learners apply the skills and knowledge they learn in the course by exercising best digital photography practices and maintaining / troubleshooting the product line as needed.

Results (business impact) –The learner’s skills and knowledge in digital photography results in the increased number of successful projects in which the VRI Phantom product line is involved.