Pix4D use in Collision Reconstruction
2 Day Virtual Training Syllabus
(Instructor Led by ACTAR Accredited Reconstructionist)

Day 1

0900 – 0950	Introduction Aerial photogrammetry for collision reconstruction Traffic incident management and quick clearance initiatives
1000 – 1050	History of forensic mapping techniques Pix4D overview Case project analysis of multi-vehicle collision Scene processing techniques
1100 – 1150	Photogrammetry overview Science of photogrammetry Pix4D photogrammetry approach - multi-ray photogrammetry Common terminology in multi-ray photogrammetry to include image capture, camera parameters, rolling shutter, and global shutter
1200 – 1300	Pix4D Capture Application Flight planning of single grid mission, double grid mission and orbit missions Optimal overlap for single grid mission, double grid mission, and orbit mission
1300 – 1330	**Lunch**
1330 – 1450	Use of Ground Control Points (GCPs) in photogrammetry Use of real time kinematic (RTK) global positioning system (GPS) and total stations to document GCPs Geo-referencing, relative accuracy, and absolute accuracy Manual tie points Scale/orientation constraints Quality report
1500 – 1730	Pix4D Mapper Software Setting up project parameters Importing images Setting project coordinate system Processing step 1 and review of quality report

Day 2

0900 – 0950	Importing GCP's Marking GCPs in basic editor Marking GCPs in ray cloud editor Use of scale constraints Reoptimization and review of quality report
1000 – 1050	Processing steps 2 and 3 Review of courtroom deliverables Orthomosaic editor Editing and clipping of point cloud Creating a fly-through of scene
1100 – 1200	Merging projects – double grid mission and orbit mission using GCP's and Manual Tie Points Using Pix4D deliverables in third party software to include orthomosaic forensic maps, three-dimensional (3D) renderings, and animations
1200 – 1230	**Lunch**
1230 – 1730	Class project: Within Pix4D Mapper, process the project and create courtroom deliverables of a mock collision scene captured with a double grid mission.

The student must successfully complete the project and demonstrate proficiency in the following areas:

Create project and import the images
Select the appropriate coordinate system
Mark GCPs with an acceptable 3D error estimation (So^2) below .50
Apply a processing area
Process the project to completion
Edit various objects in the mosaic editor
Export the mosaic
Create fly-through of collision scene

Upon completion, the project and deliverables will be reviewed by the instructor. The project and deliverables must be successfully completed in order to receive a certificate of completion.