Collision and crime scene investigation with drones

**Project & objective**
The Royal Canadian Mounted Police staged a collision and crime scene to compare the accuracy of drone data with traditional survey methods and propose a court-ready protocol.

Comparing the results, they found that drone data processed in Pix4D was as accurate as traditional methods.

**Key benefits**
- High-accuracy measurements
- Fast response time with efficient data capture
- Easy-to-use without photogrammetric knowledge
- Scene documented with both images and reconstructed model with views and details from any angle

**Project details**

<table>
<thead>
<tr>
<th>Area</th>
<th>3.1 acres</th>
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<tr>
<td>Time on site</td>
<td>~15 minutes</td>
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| Workflow | 1. UAV preparation and flight  
2. 3-5 tape measure or GPS measurements taken  
3. Automatic processing in Pix4Dmapper |
| Dataset | 437 images with a GSD of 0.6 - 0.9cm |
| Comparision with traditional methods | The RCMP found that for accident scenes, UAVs can save hours or even days gathering images and measurements. In addition and compared to other precision instruments such as laser scanners, the cost of execution and maintenance of drone mapping is much lower. |
Analysis

The RCMP found that drone data processed in Pix4D was as accurate as tape measurements or laser scanners - at a much lower cost. With the use of GCPs, the 3D densified point cloud result provided around 1cm of accuracy without missing any details in the reconstructed scene.

The digitised collision scene is permanently available and users can access files and make measurements any time. The deliverables and quality assessment report produced by the software could potentially be submitted in court as evidence for real case scenarios.

Deliverables

- 3D point cloud for scaled and georeferenced accident scene documentation
- Digital surface model
- Orthomosaic

Delivery Time

- 2 hours

Showcase courtesy of:
Royal Canadian Mounted Police

pix4d.com