



TSA Survey School – SUA Photogrammetry

Two Day Course

Course Outline

The two-day course on SUA (Small Unmanned Aircraft) Photogrammetry will be a combination of Powerpoint presentation and live demonstration of the photogrammetric procedures using one or more software suites. It is hoped that the students will engage and interact as much as possible so that the tutor can understand the level of knowledge and experience of the audience, adapting and focussing the discussion where necessary.

The following topics will be covered:

1. Digital Imaging

The quality and coverage of imagery is one of the most important aspects of being able to successfully produce data from an SUA (Small Unmanned Aircraft) platform. This area will be explored with attention to camera settings, lenses, field of view, resolution, distortion, ground sampling distance (GSD), coverage/overlap and photo-control.

2. Photogrammetry theory and practice

A brief background to photogrammetry will place today's advances in context and a little theory will explain how the process works. This will include an explanation of the perspective effect of a camera's central projection and how 3D data is produced from an orientated and overlapping series of 2D images for stereo and the newer multi-image methods. This section concludes with a discussion on the advantages and disadvantages of using photogrammetry.

3. Workflow and end-products

A workflow for the new multi-image methods will stress the planning, field checking and quality control at each stage of the process. The output (products) will be explained. These include photogrammetric point clouds, triangular meshes, textured models, raster surfaces for GIS, orthophotography and 3D vector data collection.

4. Software demonstration and case studies

Parts of the workflow will be actively demonstrated using one or more of the available software suites. This will include observation of control points for geo-referencing and a brief look at vector data collection in 3D even though this type of software is not geared up for photogrammetric mapping. If time allows a series of case studies will be shown, some of which may stray outside of the SUA realm to demonstrate the flexibility of photogrammetry for ground based projects. There is frequently a need to use aerial and terrestrial imagery to cover a subject fully.

At the end of the course students, receive a certificate of completion/attendance.