Michael Cramer
Institute for Photogrammetry (ifp)
University of Stuttgart
Geschwister-Scholl-Str. 24D

D-70174 Stuttgart/Germany

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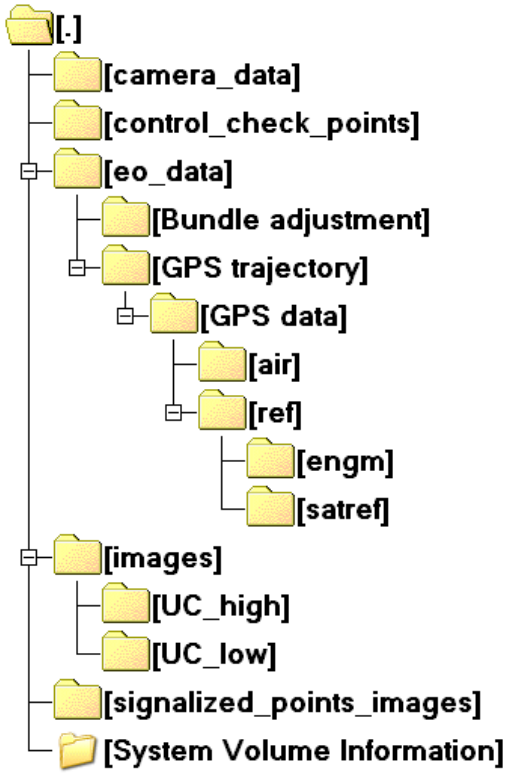
Phase II – Empirical Data Set Description UltracamD data, test site Fredrikstad

Data structure on storage disc



Data provider	IFMS-Pasewalk / Germany http://www.arcforest.com/
Mission flight	September 16, 2004
Test site	Fredrikstad

Test site

.\control_check_points	Coordinates of ground control points and check points. Check point coordinates are only given with 1m accuracy level

Fredrikstad - Norway

Maintenance	University of Aas
Test site extensions	5 km x 6.5 km main flight direction from north-east to south-west
Control / check points	51 signalized object points available not all of them visible in all images See Figure 1 for high altitude flight and Figure 2 for low altitude flight
Reference frame	UTM projection frame WGS84 ellipsoid, ellipsoidal heights

.\signalized_points_images	point measurement sketches generated from original UC images, for each check/control point one sketch is provided

Camera Data / interior orientation

.\camera_data	UltracamD calibration protocol as it is provided by Vexcel Camera data file conformal to Intergraph project

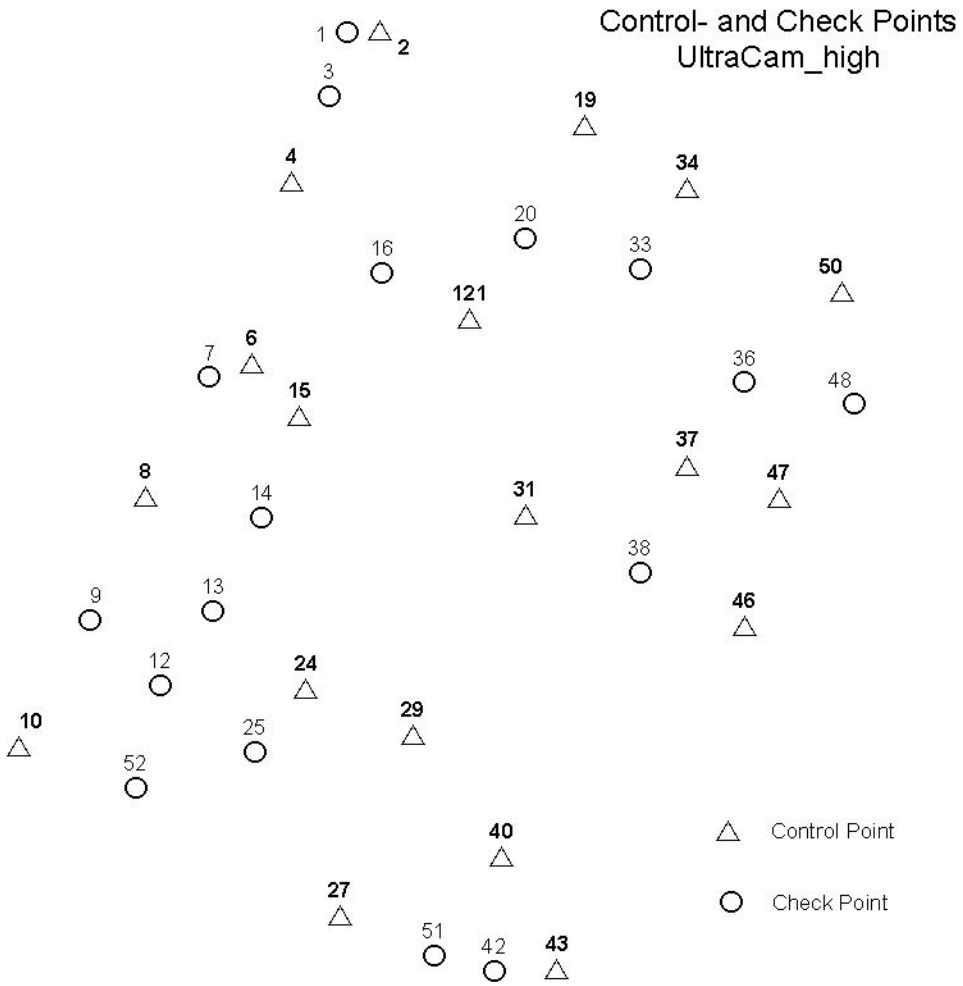


Figure 1, Distribution of control and check point information (Ultracam high flight)

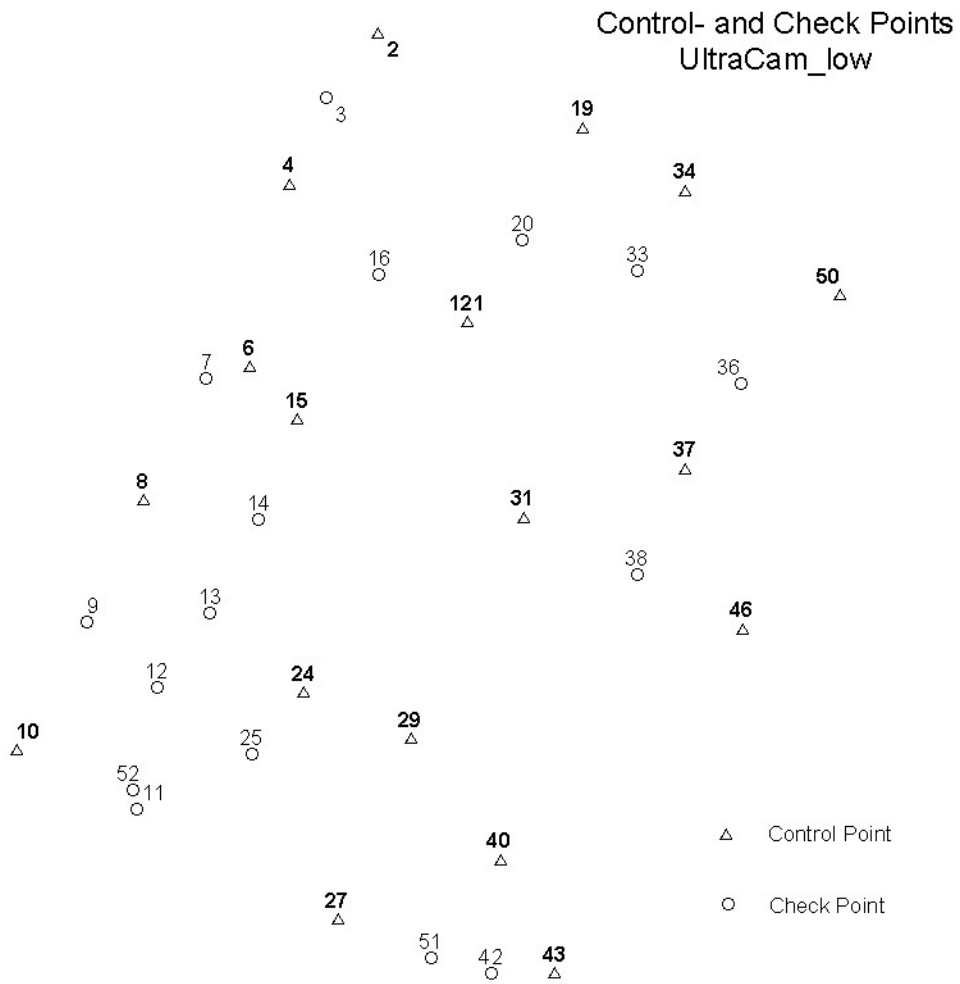


Figure 2, Distribution of control and check point information (Ultracam low flight)

Exterior orientation data

.\eo_data\Bundle adjustment	Results from a priori PATB bundle adjustment, to be used as *approximate* EO values for fast and reliable image mensuration process
.\eo_data\GPS trajectory	Results from additional dGPS trajectory computation. Since GPS test set-up was not optimal (long base line length, see Figure 3) the obtained dGPS positioning accuracy is limited
.\eo_data\GPS trajectory\GPS data	raw GPS data (aircraft and 2 master stations) for own dGPS processing, different to first announcements no additional inertial data could be made available for UCD flight

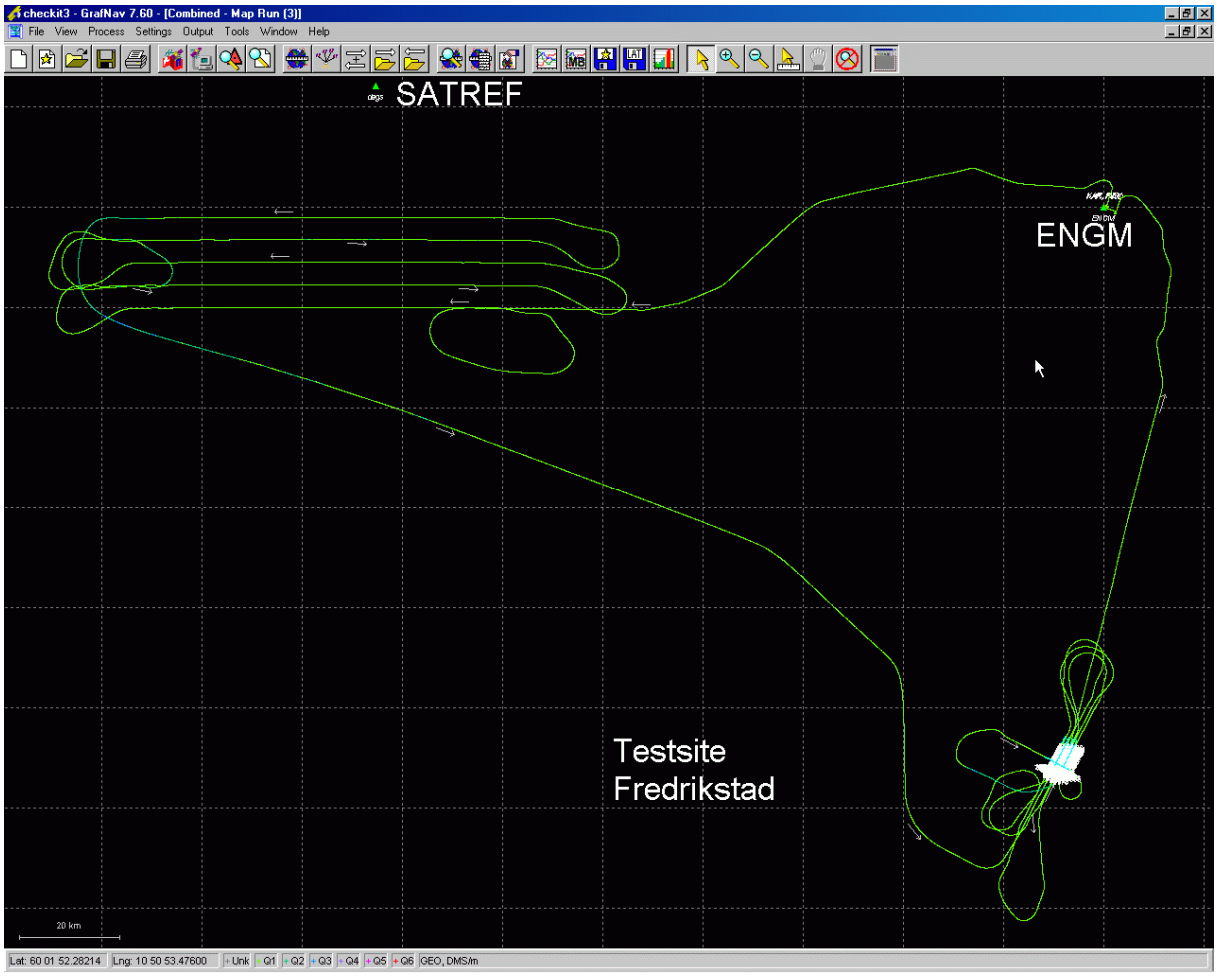


Figure 3, GPS test flight set up (dotted squares indicate an area of 20 x 20 km²)

Image data

.\images\UC_high	image material of high altitude flight
.\images\UC_low	image material of low altitude flight

Flight configuration

UC-low (Figure 4)
Flying height 1900m, GSD 0.17m, 5 long strips, 1 cross line, approx. 80% forward lap, 60% side lap, 132 images
UC-high (Figure 5)
Flying height 3800m, GSD 0.34m, 2 long strips, no cross lines, approx. 80% forward lap, 60% side lap, 29 images

Image format: tiled tiff, 16 bit/pix with overviews

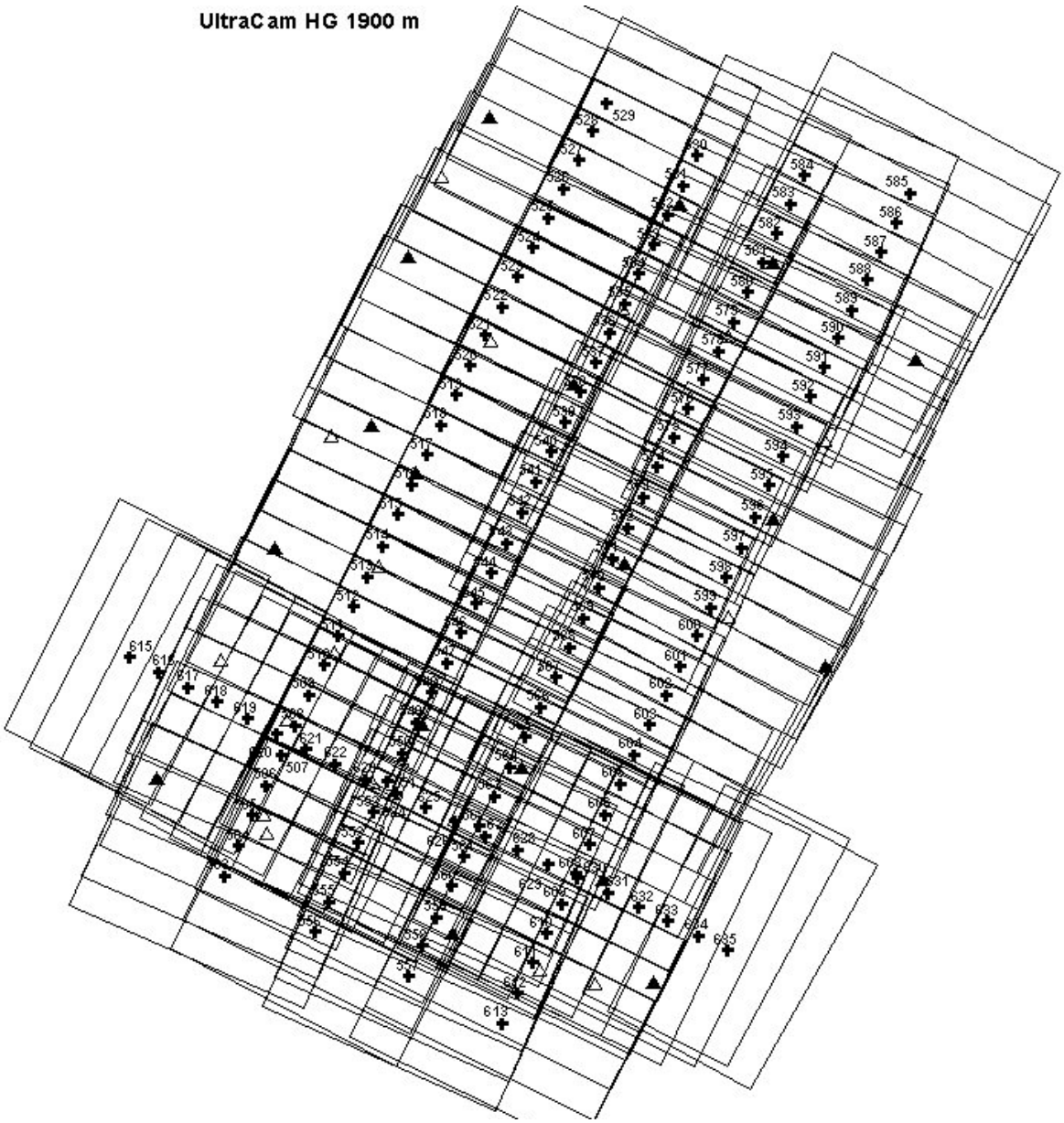


Figure 4, Flight configuration UC-low altitude mission

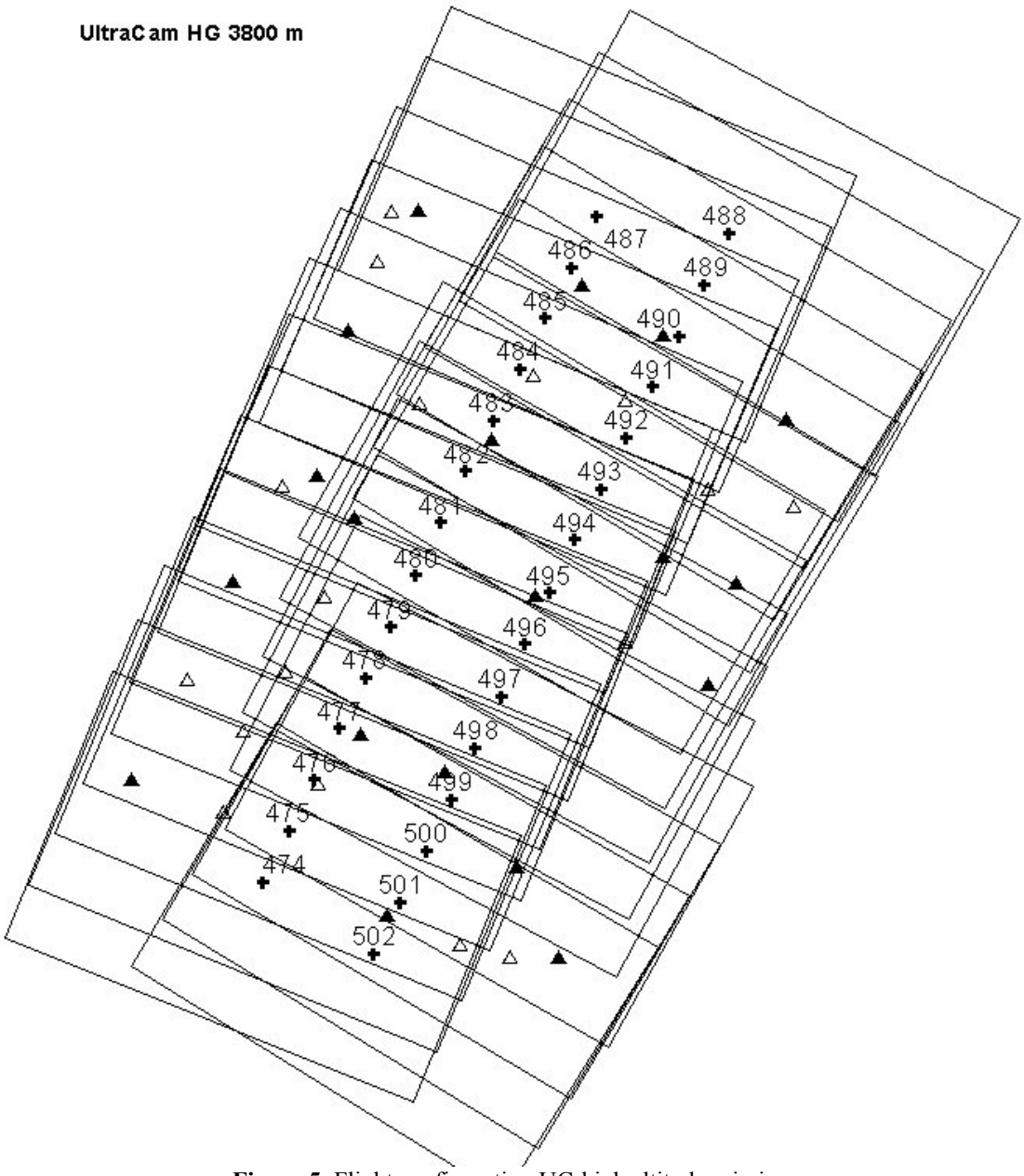


Figure 5, Flight configuration UC-high altitude mission

Final remarks

The image flight was done at September 16, in the time window between 12:00 – 13:30 h (GPS time). At that time the sun angle is close to 30 deg maximum (at 60deg northern latitude).

In some cases the visibility of control / check point signals in image is poor. It is recommended to individually adapt the histogram for the local surrounding of the measured point to increase the performance of image measurement.