CANTERBURY REGIONAL COUNCIL

CAI RURAL IMAGERY 2015-16

VOLUME 11236D01NON

Summary

Project

AAM was engaged by Canterbury Regional Council to undertake rural specification aerial photography and create orthophotography over ~14,400 sq km of Canterbury Region in the 2015-16 flying season.

The aerial photography was acquired between 16 November 2015 and 10 April 2016.

Data

Imagery products supplied in this volume are as follows:

- 30 cm gsd, RGB orthophotos, GeoTIFF with TFW and ECW, NZTopo50 1:5,000 tiles
- Vector GIS layers – project extent and tile layout
- Digital Terrain model used in orthorectification – ASCII XYZ
- Peripheral imagery is included
- Ground control surveyed
- Readme file - PDF file format.

This dataset was produced to meet the project spatial accuracy specification of 2m (90% confidence in clear, open areas). This dataset is supplied on NZTM map projection and Lyttelton 1937 vertical datum.

(Ref: PWNZ 11236D, PW 25551D)

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1. PROJECT REPORT

Safety: No safety Incidents were reported during the project

Acquisition: Aerial photography was acquired from a fixed wing aircraft on:

Date	Time range (NZST)		Resolution
16 Nov 2015	11:40 am	03:30 pm	30cm
25 Nov 2015	10:00 am	12 noon	30cm
28 Nov 2015	10:40 am	12:30 pm	30cm
30 Nov 2015	10:40 am	02:00 pm	30cm
9 Dec 2015	01:40 pm	02:00 pm	30cm
27 Dec 2015	02:00 pm	05:00 pm	30cm
28 Dec 2015	09:20 am	04:30 pm	30cm
29 Dec 2015	12 noon	02:50 pm	30cm
6 Jan 2016	10:40 am	11:30 am	30cm
22 Mar 2016	10:40 am	02:20 pm	30cm
27 Mar 2016	12:30 am	03:30 pm	30cm
10 Apr 2016	12:50 am	02:40 pm	30cm

Ground Support: GPS base station support was sourced from GeoNet and Global Surveys CORS operating in and around Canterbury Region. Ground control points were field surveyed by Sounds Surveying Ltd.

Image Processing Workflow:

- Flight planning
- Aerial image acquisition
- Imagery download and inspection
- Combine and index imagery with post-processed GPS
- Aerial triangulation and adjustment to ground control
- Preparation of DTM including DSM generation where required
- Editing or validation of DTM
- Orthophoto creation
- Image tiling
- Colour profiling
- Quality assurance

Aerial triangulation and orthorectification of the imagery was carried out with BAE Socet Set and Trimble Orthovista software.

Quality Exceptions:
One patch of cloud (1.5 x 1.5km) remains in the coverage at the intersection of tiles BX21_5k_0206, BX21_5k_0207, BX21_5k_0306, BX21_5k_0307 shown below:

Project Contacts:

Client
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Company
Canterbury Regional Council

AAM General Manager
Tim Farrier t.farrier@aamgroup.com

AAM Account Manager
Chris Worts c.worts@aamgroup.com

AAM Project Manager
Lorraine Claydon l.claydon@aamgroup.com

2. DATA INSTALLATION

Data formats	:	GeoTIFF, TFW, SHP, PDF,ASC
Number & type of media	:	HDD
Information files on media	:	Readme_11236D01NON.pdf
Data formatted on	:	12/07/2016
Disk volume	:	11236D01NON

README FILE

This document (Readme_11236D01NON.pdf) is provided as an Acrobat file in this volume.

FILE SIZES AND NAMES

Data is provided in standard LINZ 1:5,000 tiles, 2,400m x 3,600m to the following file naming convention:

eg. BX24_5K_095088.tif - NZTopo50 Sheet_Map scale_Tile number

.tif	GeoTIFF
.ecw	ECW compressed image
.tfw	Tif world reference file
.shp	Shapefile
.asc	ASCII XYZ (ortho DTM)

The 4-band RGBI and 3-band RGB image file names are prefixed with RGBI_ and RGB_ respectively.

4. METADATA

SOURCE DATA

Item	Source	Description	Ref No	Date
Photography	AAM	DMC	25551D	As listed in Section 1
GPS Base Data	GeoNET / Globe Surveys	Static GPS	25551D	As above
Field Survey Data	Sounds Surveying	RTK GPS	11236D	13-15/11/2015

DATA CHARACTERISTICS

Characteristic	Description
Image Format	GeoTIFF & TFW
TIFF	0.30m cell size / 4 band and 3 band 8-bit per band colour
ECW	0.30m cell size / 4 band and 3 band 8-bit per band colour
Control	XLS, PDF, JPG
Ortho DSM/DTM	ASCII XYZ
Tile Layout / Extents	ESRI Shapefile

REFERENCE SYSTEMS

	Horizontal	Vertical
Datum	NZGD2000/NZTM	Lyttleton 1937
Projection	NZTM	N/A
Geoid Model	N/A	NZGeoid 2009

OTHER CAPTURE CRITERIA

Item	Description
Tidal Constraints	Within 2 hours of low tide
Minimum Sun Angle	>35 degrees

5. ACCURACY

PROJECT DESIGN ACCURACY

Project specifications and technical processes were designed to achieve data accuracies as follows:

Component	Value	Basis of Estimation
Orthophotos Control	+/- 2.0m +/- 0.1m	Project design Survey methodology used

Notes on Expected Accuracy

- Values shown above represent 90% confidence level.

DATA VALIDATION

- Imagery in this volume has been compared to control points obtained by field survey and assumed to be error-free. The test points were distributed across the area. Comparison of the field test points with positions measured on the imagery resulted in:

Location	Mean Difference (m)	STDEV (m)	90% Accuracy (m)	Required Accuracy (m)
Rural Canterbury	0.34	0.29	0.48	2.0

5. CONDITIONS OF SUPPLY

The data in this volume has been commissioned by **CANTERBURY REGIONAL COUNCIL (the CLIENT)**.

The data in this volume is provided by AAM NZ Limited (AAM) to **the CLIENT** under the Contract for Services, Contract No. C15C/149860, dated 6 October 2015.

1. This file (Readme_11236D01NON.pdf) should always be stored with the unaltered data contained in this volume.

2. The data should not be used for purposes beyond that explicitly agreed in the description of the Services provided by AAM.

Any problems associated with the information in the data files contained in this volume should be reported to AAM NZ Limited. A complete list of project related contacts is listed on page 3 under the Project Report heading.

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6. VALIDATION PLOT

Rural Canterbury