

## ECAN LiDAR DATA, 05-11/09/2010, post Greendale earthquake

Access to ECAN's LiDAR DATA, captured 05-11/09/2010, post Greendale earthquake, requires sign-off on their data supply conditions with the UC GeoSpatial Data Custodian.

### Data overview

**Data Type:** Lidar, Lidar Differencing & Orthophotos

**Source:** NZ Aerial Mapping (NZAM)

**Date of Capture:** 05-11/09/2010

**Format:**

- Ground & non ground point clouds (ASCII xyz files in compressed .rar format)
- ESRI file geodatabase multipoint features & terrains
- 0.5 metre contours (ESRI shapefile)
- DEM & hillshades (ESRI GRID)
- 1 dimension lidar difference models (ESRI GRID & AAIGRID)
- Aerial photography (TIFF & ECW format)

The supplied products are all in terms of the New Zealand Transverse Mercator (NZTM) map projection, and NZTopo50 1:1,000 tiles (480m x 720m).

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### Sept 2010 Metadata: Essential Reading!

This dataset amounts to ~23 GB, in 718 folders, totalling 16,108 files. At the top level there are 12 folders (see Figure 1 below): ECW; Lidar Differencing; and paired Lidar and Ortho folders for the following five areas of interest (AOI): Christchurch (Chch); fault trace; Hornby Halswell; Kaiapoi; and Selwyn Huts (see Figure 2 below).

Each folder (except ECW) contains a metadata 'supply' file in a series s1 to s10 (see the links below Figure 1). There is no s6 or s8, and in some cases one series may cover many AOI's. Finally, the 'as delivered' folder structure varies from that described in the metadata, in that there is no PointCloud folder - just Ground and Non Ground tiles in ASCII file XYZ format.

Figure 1: Overview of the Sept 2010 LiDAR folder structure

| Folder   | Description   |
|--|---|
| <ul style="list-style-type: none"> <li>[-] 2010_09_05               <ul style="list-style-type: none"> <li>[-] ECW</li> <li>[-] Lidar Differencing                   <ul style="list-style-type: none"> <li>[-] CHRISTCHURCH                       <ul style="list-style-type: none"> <li>[+] Grids</li> <li>[+] Mosaic</li> </ul> </li> <li>[+] HORNBY-HALSWELL</li> <li>[+] KAIAPOI</li> <li>LAYOUT</li> <li>[+] SELWYN HUTS</li> </ul> </li> <li>[-] NZAM CHCH LIDAR REV1                   <ul style="list-style-type: none"> <li>CONTOUR</li> <li>GROUND</li> <li>LAYOUT</li> <li>NON GROUND</li> <li>[-] PROCESSING                       <ul style="list-style-type: none"> <li>CHCH.gdb</li> <li>chch_grd</li> <li>chch_shd</li> <li>info</li> </ul> </li> </ul> </li> <li>[-] NZAM CHCH ORTHOS                   <ul style="list-style-type: none"> <li>ECW</li> <li>TIFF</li> </ul> </li> <li>[+] NZAM FAULT TRACE LIDAR</li> <li>[+] NZAM FAULT TRACE ORTHOS</li> <li>[+] NZAM HORNBY HALSWELL LIDAR</li> <li>[+] NZAM HORNBY HALSWELL ORTHOS</li> <li>[+] NZAM KAIAPOI LIDAR REV1</li> <li>[+] NZAM KAIAPOI ORTHOS</li> <li>[+] NZAM SELWYN HUTS LIDAR</li> <li>[+] NZAM SELWYN HUTS ORTHOS</li> </ul> </li> </ul> | <p><b>ECW</b> &gt; AOI image overviews (Enhanced Compression Wavelet).</p> <p><b>Lidar Differencing</b> &gt; ASCII grid tiles @ 480m x 720m.</p> <ul style="list-style-type: none"> <li>+ <b>Grids</b> &gt; ESRI Grid tiles @ 480m x 720m.</li> <li>+ <b>Mosaic</b> &gt; ESRI Grid composite for the AOI. Cell values represent a difference surface at 1m resolution, created by subtracting a post-earthquake Digital Elevation Model (DEM) from a pre-earthquake DEM. Use with caution.</li> <li>+ <b>Layout</b> &gt; ESRI Shapefile extents and tile layouts.</li> </ul> <p><b>Lidar</b> &gt;</p> <ul style="list-style-type: none"> <li>+ <b>Contour</b> &gt; 0.5 m contour tiles.</li> <li>+ <b>Ground and Non Ground</b> &gt; point cloud tiles in ASCII file XYZ format, compressed in .RAR (Roshal ARchive) format – requires 7-Zip or similar to uncompress).</li> <li>+ <b>Layout</b> &gt; ESRI Shapefile extents and tile layouts.</li> <li>+ <b>Processing</b> &gt; AOI ESRI Grid composites for ground elevation and hill shade, plus an ESRI TIN including Lidar points and TIN break lines and facets).</li> </ul> <p><b>Orthos</b> &gt;</p> <ul style="list-style-type: none"> <li>+ <b>ECW</b> &gt; Tiled 0.25m orthophotos in Enhanced Compression Wavelet format.</li> <li>+ <b>TIFF</b> &gt; Tiled 0.25m orthophotos in Tagged Image File format.</li> </ul> <p>Repeat as above for each AOI Lidar/Ortho pair...</p> |

The Metadata folder has more documentation.

- 10.130\_metadata\_s10\_Lidar\_Differencing.pdf
- 10.130\_metadata\_s4\_Chch\_Lidar\_rev1.pdf
- 10.130\_metadata\_s1\_Chch\_Orthos.pdf
- 10.130\_metadata\_s9\_fault\_trace\_Lidar.pdf
- 10.130\_metadata\_s3\_fault\_trace\_Orthos.pdf
- 10.130\_metadata\_s7\_Halswell\_Lidar.pdf
- 10.130\_metadata\_s3\_Halswell\_Orthos.pdf
- 10.130\_metadata\_s5\_Kaipoi\_Lidar\_rev1.pdf
- 10.130\_metadata\_s2\_Kaipoi\_Orthos.pdf
- 10.130\_metadata\_s7\_Selwyn\_Lidar.pdf
- 10.130\_metadata\_s3\_Selwyn\_Orthos.pdf

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