LiDAR at the Australian 3Day 2018

Two maps: Lovely Banks, Curryjong Rivulet

- Lovely Banks: Approximately 15 km^2, new LiDAR
- Curryjong Rivulet: Around 4.5 km^2, existing LiDAR

Curryjong Rivulet

- The area was mapped in the mid-1980s but little used, and subsequently converted to eucalypt plantation;
- The area adjoined an existing map that was used for local events but while providing a good arena and facilities, it was not suitable for a major event by itself;
- Forestry Tasmania LiDAR, $800;
- LiDAR interpretation via OCAD 12;
- The basemap was OCAD generated contours with vegetation overlaid;

Lovely Banks

- Background: the original intention was to use the existing "Sandstone Valleys" map;
- Sandstone Valleys was mapped in the mid to late late1980s and was used extensively for local (state championships), national (schools championships), and international events (warmup race for WMOC 1991);
- The area was mapped in two stages: western half by local mappers, and the eastern half by Swedish mappers;
- Our original intention was to simply update the map for the 2018 3Day;
- When we started updating the map, we realised there were deficiencies (different mapping standards, which should have been noticed, but were obscured by the fact that we tended to use either the eastern half or the western half. There were also distortions where the two halves joined which would have been obvious when GPS data were overlaid on the map.
- Because we enjoyed excellent relationships with the two landowners we decided to remap the area, and LiDAR was really the only option;

LiDAR providers

- Forestry Tasmania (Curryjong Rivulet)
- LiDAR provided by Photomapping Services Pty Ltd (www.photomapping.com.au)
- Orienteering Tasmania (OT) simply asked the local mapping authority to manage the provision of the data so we didn't investigate any alternative providers;
- Price quoted was around $10 000 for the LiDAR, and $4 000 for an orthophoto;

Base map generation for Lovely Banks: tools

- Lastools
- Karttapullautin
- Gimp
- OCAD

Lastools

- Combining tiles (3 groups of 12 tiles using Lasmerge)
- Possible conversion to txt format (las2txt) for processing in Karttapullautin?

Karttapullautin

- Generating base map files
- From memory, default settings in pullauta.ini were used, except for *northlinesangle*

Terje Mathisen tools

- I tried using Terje Mathisen's tools to derive vegetation cover as dxf files (veg2dxf.pl) but didn't have any luck with this – has anyone tried using these tools?
- I generated some slope images (using gen-slope-asc-x.pl) as I thought this would be useful to generate background images for the major creek on the map. I thought the result was marginally better than the result from OCAD, but neither was more useful than the orthophoto provided by Photomapping.

Orthophotos

- Very expensive!
- Amazing resolution! (e.g. Alex was able to identify fence-lines in paddocks from shadows cast by star pickets).
- The local mapping authority obviously thought they were pretty good as it has incorporated them into the photomosaic image of Tasmania on the List (Land Information System Tasmania) database.
- Originally supplied in .ecw format but converted to an OCAD compatible format by Bernard Walker using either Global Mapper or ARCGIS
- We ended up with 64 .jpg files

GIMP

- GIMP is free image editing program that I first used when Alex mapped the Transit Flat map for the world cup long distance race in Tasmania in 2015
- Alex noted that the rock detail on the image generated by Karttapullautin was black, and as he used black pencil to draw his rock, he asked if we could change the colour.
- I used GIMP to do this for the Lovely Banks map (not sure if you can do this in MS Paint)

Fieldwork basemaps

- After generating some test files for Alex, we eventually decided that the best option was for him to visit Hobart for a couple of days so we could extract the most useful images for his fieldwork.
- Method:
- - create a map in OCAD using the contours generated by Karttapullautin (contours were considered smoother than those generated by OCAD hence less adjustment required for final drawing).
- - bring in the Pullautin images (rock, vegetation) and add whatever detail could be extracted from the orthophoto (tracks, creeks, waterholes, fences)
- - print overlapping A4 sheets
- - start work!