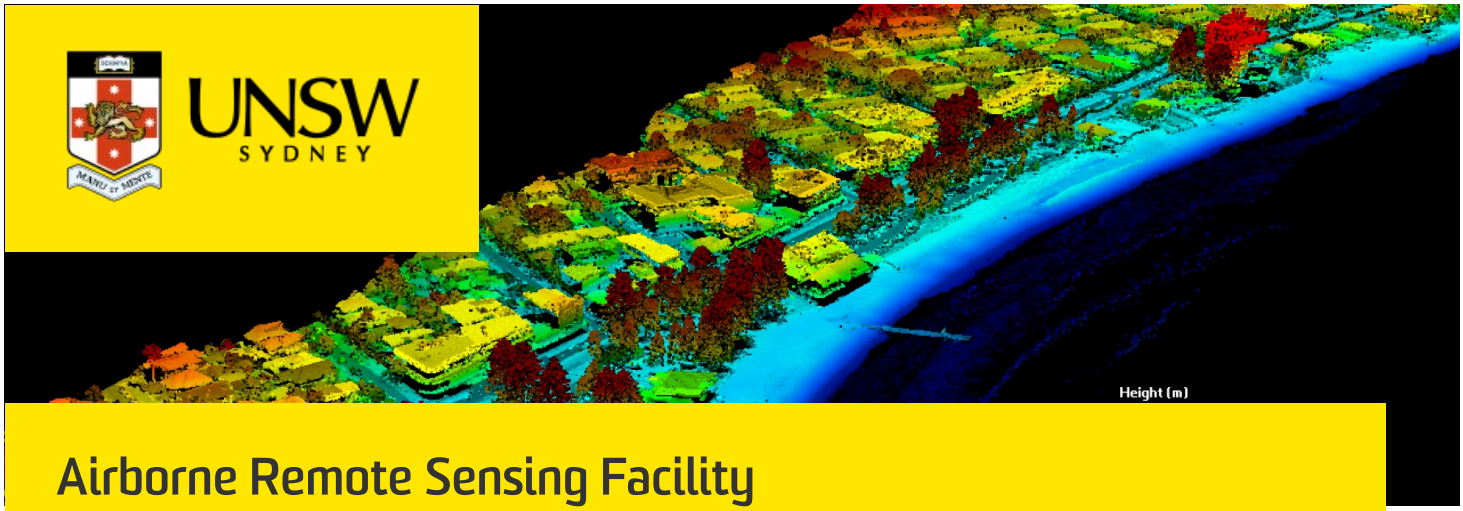

Airborne Remote Sensing Facility

Providing airborne support for projects requiring airborne remote sensing observations, and research support for the analysis of airborne lidar and photogrammetry data.

Present facilities include airborne lidar and airborne photogrammetry equipment mounted in a twin-engine aircraft fitted with approved instrument rack and observation port, but other equipment may also be flown.

Competitive Advantage

UNSW School of Aviation is unique amongst universities in hosting CASA approved air operations which are used for flying training and aerial surveying. Campaigns deploy from UNSW's Flying Operations Unit based at Bankstown Airport.

Impact

Publications include high impact scientific research and technical papers, and conference publications describing community impacts. The 2017 paper in Nature Scientific reports referenced below is very highly cited and along with other work has advised both researchers and government policy makers to think more deeply about the nature of coastal storms, and their impact on development and society.

Recent projects

- Beach surveys to determine erosion and deposition patterns and their causes,
- Assessment of ocean wave dissipation over coral reefs,
- Assessment of vegetation extent and change
- Survey of areas subject to future development, and
- Observation of reflected GPS signals

Successful projects have been funded by the Australian Research Council, agencies of the NSW government, local councils, consultant agencies and University research groups.

Capabilities and resources

More Information

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The Airborne Research Facility operates a

- twin engine Piper PA44 Seminole, with
  - approved observation port,
  - Riegl VQ-480iLidar,
  - Novatel OEM5 GNSS,
  - Honeywell HG1700 IMU
  - and high resolution camera.

GNSS positioning and attitude data is typically post-processed using the carrier-phase baseline method with Continuously Operating Reference (CORS) base stations. Typical Lidar resolution is 10 points per sq m with Camera pixel size of order 5 cm at 300 m flight above the surface to be surveyed. Additional survey equipment can be deployed in the aircraft subject to weight, volume and power requirements.Data obtained can be delivered via .las files (Lidar) and GeoTIFF othomosaics (photogrammetry), and other formats as required. Data analysis is available, for example detecting changes in topographic heights and surfaces, and changes in vegetation.