

— LIDAR PROCESSING · CORRECTION · FUSION

Spatial data for industry.

Australia-wide LiDAR processing and correction, and GroundMap Fusion™: ground data that mining and government can measure from and defend.

01 Who we are

GroundMap processes and corrects LiDAR and imagery from any sensor or provider, Australia-wide, and delivers models that state how certain every point is.

GroundMap Fusion™ brings new multi-pass capture and every earlier survey of a site into one graded model: a design, a volume or an approval rests on all the evidence. New capture is flown or scanned to our specification by operators engaged per project, CASA-certified for aircraft and drones.

At a glance

ENQUIRIES	projects@groundmap.com.au
WEB	groundmap.com.au
SERVICE AREA	Australia-wide; New Zealand and the United States, delivered from Australia
INDUSTRY	ANZSIC 6922 Surveying and Mapping Services

02 Capabilities

PROCESSING · CORRECTION · FUSION · ASSURANCE · CAPTURE

PROCESSING

LiDAR processing

Processing and correction, Australia-wide: any sensor, any provider.

ASSURANCE

Quality assurance

Independent checks of any provider's LiDAR.

PROCESSING

3D models and digital twins

Cities, sites, tunnels and assets in 3D.

FUSION

GroundMap Fusion™

Every pass and survey in one graded model.

PROCESSING

Terrain and surface models

DTM, DSM, contours and relief.

CAPTURE

LiDAR capture

Airborne, drone, terrestrial, mobile and underground.

ARCHIVE

Archive LiDAR

Decades of surveys, made consistent.

PROCESSING

Change and volumes

What moved, where, and how much.

CAPTURE

Imagery

Aerial, drone, oblique, multispectral and thermal.

03 GroundMap Fusion™

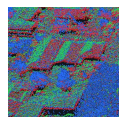
THREE PACKAGES · THREE TIERS

New passes, earlier surveys and repeat capture, fused into one model with every point graded. Packages set what goes in; tiers set what comes out.



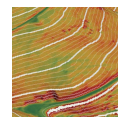
Fusion Multi-Pass

Extra passes at new headings and angles, cross-checked into one model.



Fusion Archive

Earlier surveys of the site, from any year or datum, aligned with your new capture.



Fusion Monitor

Repeat capture on your schedule. Real change, beyond each pair's measured scatter at 95 % confidence, kept as its own layer.

TIER 1

Fusion

Your passes and earlier surveys, aligned and fused into one point cloud, every point graded by how many passes agree.

TIER 2

Fusion Graded

Adds a confidence class to every point and flags every modelled surface. Real change, beyond each pair's measured scatter at 95 % confidence, kept as its own layer.

TIER 3 · LASER AND IMAGERY

Fusion Spectra

LiDAR and imagery fused. Points measured from overlapping imagery join the laser-measured ones, each with its own confidence, and the colour comes from the photographs themselves.

Hobart images, pages 1 and 2: GroundMap processing of public survey data. Survey data: Hobart City 2023/24 (captured by Fugro for the State of Tasmania; theLIST; CC BY 3.0 AU), Climate Futures Derwent 2008 (captured by DiMAP for ACE CRC; ACE CRC licence) and Mount Wellington 2011 (no licence on record), via ELVIS. Processing: GroundMap. Licences and credit lines: page 3.

04 Why GroundMap

01 Any sensor, any provider, Australia-wide

LiDAR of any year or provider corrected to one specification: offsets, tilts and flight-line shifts measured on stable ground and removed; classification reviewed and corrected.

03 Every survey of the site, in one model

New capture fused with earlier surveys of any year, sensor or datum: more ground under canopy, and a baseline for what follows.

05 Gaps filled, and flagged

Walls and gaps no pass measured are modelled from measured surfaces, flagged per point (LAS synthetic flag), and never counted as confirmed.

02 Every point graded

How many passes measured it and whether they agree within 15 cm: the confidence behind a design or a volume, on the record.

04 Change separated from error

Real change, beyond each pair's measured scatter at 95 % confidence, kept as its own layer (ICSM class 22, Temporal Exclusion), never averaged into the terrain.

06 Specified, then reported

Area, accuracy, classes, datums and deliverables agreed in writing first. Each delivery reported with method, lineage and exceptions.

05 Showcase: Hobart, three surveys fused

GROUNDMAP PROCESSING OF PUBLIC SURVEY DATA · NOT CLIENT WORK



Hobart city centre, 12 km². Survey data: Hobart City 2023/24 (captured by Fugro for the State of Tasmania; theLIST; CC BY 3.0 AU), Climate Futures Derwent 2008 (captured by DiMAP for ACE CRC; ACE CRC licence) and Mount Wellington 2011 (no licence on record), via ELVIS. Processing: GroundMap. Credit lines: page 3.

6.71 → 8.16

Measured ground points per m² under tree canopy (the 1.53 km² all three surveys cover), 2024 survey alone and with 2011 and 2008 added (+21.7 %).

21.4 % → 39.4 %

Of the ground and roof surface all three surveys cover (4.20 km²), the share confirmed by at least two surveys within 15 cm: two surveys, then three.

398,268,618

Points in the model. Every one graded; every modelled point flagged.

06 Accuracy

MEASURED ON EVERY JOB · STATED PER JOB

Accuracy is measured on every job and stated per job. By scan type:

Drone and ground scanning

Terrestrial, mobile and underground laser registration. **USS Pampanito** (San Francisco, United States): 98 % of held-out overlap within 1 cm, point to plane. **El Teniente** (Chile): 98.7 % where two or more scans overlap, each scan within 1 cm of the shared surface. Registration agreement between scans, not absolute accuracy against control.

Government aircraft LiDAR

43 State survey marks held out of GroundMap's processing: median -3 mm, 33 of 43 within 10 cm, RMSE 0.12 m.

Hobart Fusion

On stable open ground, checked independently of the alignment, the 2011 survey agrees with the 2024 survey to a median -6 mm (NMAD 64 mm, 95th percentile 157 mm; 94.4 % within 15 cm): relative agreement between surveys, not absolute accuracy.

Survey marks: LIST Survey Control, the LIST © State of Tasmania, CC BY 3.0 AU. Aircraft LiDAR: public surveys published on theLIST (State of Tasmania) and obtained via ELVIS (Geoscience Australia), under the licences recorded with them (theLIST: © State of Tasmania, CC BY 3.0 AU). Processing: GroundMap. USS Pampanito: Survey data: USS Pampanito, Autodesk, Topcon, 3D Robotics, USS Pampanito 2020: USS Pampanito Submarine - LiDAR - Terrestrial, Photogrammetry - Aerial. Distributed by Open Heritage 3D. <https://doi.org/10.26301/qdpd-2250> (CC BY-NC-SA 4.0). Processing: GroundMap. No affiliation with the museum ship's operator or the dataset authors. El Teniente: Survey data: Chilean underground mine dataset, Advanced Mining Technology Center (AMTC), Universidad de Chile (Leung et al., IJRR 2017; CC BY-NC-ND 3.0 CL). Processing: GroundMap. No affiliation with the mine operator or the dataset authors.

07 Industries

Mining and resources

Exploration to closure, surface and underground.

Government

Flood, coast, planning and emergency, with data quality stated.

Infrastructure and utilities

Corridors, networks and assets, measured, classified and graded for confidence.

Construction and tunnelling

Existing conditions, progress and as-built, above and below ground.

Forestry and environment

Canopy, ground and change: forests measured tree by tree, and the ground beneath them.

Engineering and survey firms

LiDAR processing capacity behind your own team, delivered to your specification and branding.

08 Standards and deliverables

LiDAR specification

ICSM Australian Airborne LiDAR Acquisition Specification, Version 2.0 (2025)

Accuracy reporting

Against independent check points, ICSM Version 2.0 sections 3.4 to 3.9, stated per job

Point clouds

ASPRS LAS 1.4 R15 and LAZ; ICSM standard classes, change as class 22

Rasters and metadata

OGC Cloud Optimized GeoTIFF; AS/NZS ISO 19115.1:2015 metadata

Datums

GDA2020 / MGA; AHD through AUSGeoid2020; AHD83 in Tasmania

New Zealand and United States

LINZ National Aerial LiDAR Base Specification 1.2; USGS Lidar Base Specification 2025 rev. A

09 Quality and data security

Management system

Integrated management system aligned with ISO 9001:2026, ISO 14001:2026 and ISO 45001:2018. Not third-party certified. Every job is specified in writing, recorded stage by stage in a run record, checked by QA scripts on our own machines, and released by an authorised person.

Data security

Stored and processed in Australia, encrypted at rest, on storage GroundMap controls. No external AI service receives client files. Automated quality checks share only numeric summaries, never data, names or locations.

10 How every job is controlled

INTEGRATED MANAGEMENT SYSTEM

Specified

Scope, acceptance criteria, accuracy and how it will be measured, reference systems, data licences, conflicts and the client's data terms agreed in writing before work starts.

Released

Released by an authorised person against the specification, with an independent check wherever possible; geology content signed off by the Principal Geologist.

Recorded

Every job writes a run record: inputs and their checksums, method and software versions, parameters, results and the people involved, stage by stage.

Delivered

Data, QA report, accuracy note, lineage, ISO 19115 metadata and the credit line of every source, through the client's channel with checksums.

Checked

QA scripts on our own machines compute the numbers, and a person reviews them. Accuracy is measured on every job and stated per job, with the rules fixed before any reading.

Returned or deleted

Retained for 12 months after final delivery or as the contract sets, then returned or deleted with written confirmation; the job's quality records (no point clouds or imagery) are kept, as the confirmation lists.

11 Key personnel

Tom Eiseman

FOUNDER & PRINCIPAL

Leads GroundMap Fusion and GroundMap's processing, from survey alignment and confidence grading through to delivery.

Lee Eiseman

PRINCIPAL GEOLOGIST

Geological interpretation and review of exploration and mining deliverables.

12 Business details

BUSINESS

GroundMap · ABN 25 459 564 880

PROJECTS

projects@groundmap.com.au

GENERAL

info@groundmap.com.au

ACCOUNTS

accounts@groundmap.com.au

SIZE

Australian-based small-to-medium enterprise (SME)

CAPTURE

By CASA-certified operators engaged for each project; GroundMap's own RePL and ReOC being arranged

INSURANCE

Professional indemnity and public liability: being arranged

13 Working with GroundMap

Start with a pilot

A pilot on your own data under a written pilot agreement, before any paid engagement.

Procurement

Business details, credentials and policies: groundmap.com.au/working-with-us/

Hobart survey data, pages 1 and 2. Licences: per survey, listed at groundmap.com.au/about/data-and-licences/. Attribution: Hobart City 2023/24 LiDAR from theLIST © State of Tasmania. Licence: CC BY 3.0 AU. Climate Futures Derwent 2008 LiDAR: The LiDAR Dataset was collected as part of the Climate Futures for Tasmania project; a project managed and delivered by the Antarctic Climate & Ecosystems Cooperative Research Centre. The dataset was funded primarily by the State Government of Tasmania through the State Emergency Service and the Commonwealth Natural Disaster Mitigation Program. Licence: ACE CRC licence (Australia wide; commercial use, adaptation and sub-licence). Mount Wellington 2011 LiDAR, flown 20 to 28 January 2011, obtained via ELVIS (Geoscience Australia). Licence: No licence on record.

GroundMap acknowledges the Traditional Custodians of Country throughout Australia and their continuing connection to land, sea and community. We pay our respects to their Elders past and present.