

Coordinated Imagery Program Expression of Interest Form

About this Application

This application is for lodging an Expression of Interest to become a Purchase Partner on the capture of aerial photography, elevation data (LiDAR) and/or 3D products with the Department of Environment, Land, Water and Planning's (DELWP) Coordinated Imagery Program (CIP).

Supplementary Documentation: *Height Displacement Theory, Specifications and Examples*

Primary Point of Contact

Please designate a single primary point of contact for the duration of this project. In the event that you are or will be utilising a flexible workplace arrangement (job share, taking extended leave, etc) during the project you may include multiple points of contact, but please try to keep us informed of the details (e.g.: part-time days, handover dates).

1. Personal Details

Title	First name	Other name/s	Surname
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

2. Business Address

Company name	Office/Unit No.	Street No.
<input type="text"/>	<input type="text"/>	<input type="text"/>
Street name		
<input type="text"/>		
City/Suburb/Town	Postcode	DX
<input type="text"/>	<input type="text"/>	<input type="text"/>

3. Your Contact Details

Telephone No.	Mobile No.	Contact email
<input type="text"/>	<input type="text"/>	<input type="text" value="gis@"/>

4. Additional Details

Date of lodging	Invoicing email
<input type="text" value="dd/mm/yyyy"/>	<input type="text" value="accounts@"/>

5. Secondary Points of Contact

Provide below if necessary

Project Scope

The section below relates to the broader scope of your project.

1. Project Planning

Do you have a specific project in mind?

- Yes, a specific project No. No budget this year or only wish to be kept informed of projects in my area.

2. Capture Type

Select [x] the desired type of capture for imagery or elevation products.

Options marked with an asterisk are not covered by this form. If selected, CIP will contact you to discuss the specifications further.

Imagery

- Aerial Photography Multi-Spectral Satellite*

Elevation

- LiDAR

3D Products and Footprints

- Photogrammetric Mesh Individual 3D Object Models or 2D Footprints*

3. Intended Use

This is for inclusion into the request for quote (RFQ) and specification documents sent out to contractors and may be used by CIP to offer suggestions and technical feedback on project plans. More information may result in a more appropriate product.

e.g.: Asset monitoring, environmental management, etc. If smaller assets must be resolved, be specific.

4. Period of Contract

Select [x] the desired contract length for capture.

- Single year Two years
 Three years Other (please specify)

Captures Per Year

Will multiple captures across different time periods within the one year ("epochs") be required? If so, how many?

e.g.: Separate Summer and Autumn captures would be two epochs. These are then defined in the Capture Window section overleaf.

- Single epoch Two epochs
 Three epochs Other (please specify)

5. Capture Window

Over what time period is the capture to ideally occur? If seeking a multi-year contract, only specify the dates for the first year.

Note that the time between accepting an Expression of Interest and capture commencement is typically a minimum of four weeks. Naturally, this increases for complex projects with additional partners.

Single Epoch Capture

Start date

End date

Multi Epoch Capture

Epoch 1: Start date

Epoch 1: End date

Epoch 2: Start date

Epoch 2: End date

Epoch 3: Start date

Epoch 3: End date

Please attach an additional document if more than three epochs are required.

Flexibility

Are these dates flexible?

A flexible capture window enables CIP to potentially find more partners, reducing the cost.

- Yes No

If yes, please specify to what extent the capture windows can be changed. Is capture in a later season acceptable?

6. Delivery Time Frames

Select [x] an acceptable time frame from end of acquisition to delivery, and whether intermediate products are needed.

A relaxed timeframe may enable us to potentially negotiate down the cost. Please note that customised data packaging will generally take one week longer than if your capture aligns with the entire project. All timeframes are merely targets and are contingent upon successful passing of QA.

Acquisition to Delivery Timeframe (Processing + QA + Packaging)

- Usual timeframe (5-6 weeks) Other (please specify):

- Relaxed timeframe (7-8 weeks)

Rapid Delivery Products (if required)

Optional intermediate lower specification product. May only be available from a limited number of providers.

- One week Other (please specify):

- Two weeks

7. Area / Location

Please describe your location. Possible information to include:

- LGA or CMA
- Project area
- Area in km², etc
- Management area
- Townships
- Are full image tiles required?

Rural and Urban/Towns

Do you require separate rural and urban/towns capture at different specification?

- Yes No

Entire Survey Area or Rural Capture

- Extent file supplied (please specify filename)

.shp

- Buffer distance required (km)

km

Urban / Towns Capture

- Extent file supplied (please specify filename)

.shp

- Buffer distance required (km)

km

Use this if you would like CIP to add a buffer. If the buffer is already applied within the shape file, please leave this blank.

8. Zone

Select [x] the relevant MGA Zone(s) you operate in.

- Zone 54 Zone 55

If you are not requesting aerial photography products, please skip ahead to the relevant section:

- [Technical Specifications: Elevation](#)
- [Technical Specifications: Photogrammetric Mesh](#)

Technical Specifications: Imagery

The section below is used to specify your required digital products, projection and datum, resolution and quality.

CIP generally recommends the following specifications for imagery:

Digital Products	
TIFF format tiles - native projection only ECW format mosaics - projections as needed	
Rural Capture	Urban / Towns Capture
1 km tile size 20 cm resolution RGB ± 4 pixel accuracy Complete colour balancing Seamless edge matching 2.5:1 height displacement	1 km tile size 10 cm resolution RGB ± 2 pixel accuracy Complete colour balancing Seamless edge matching 2.5:1 height displacement

1. Digital Products

Select [x] the desired product(s) below.

Tiles will be provided in native GDA2020 unless specifically requested otherwise. All imagery will come with TFW/EWW, TAB and ERS header files. CIP recommends against requesting custom tilesets. Costs related to additional products will be passed on.

Tile Format

- TIFF (Uncompressed) ECW
 JPEG2000 JPEG
 Other (please specify)

Mosaic Format

- ECW
 JPEG2000 JPEG
 Other (please specify)

Tile Projection

- GDA2020 MGA zone 5X (EPSG: 785X)
 Other (please specify)

Mosaic Projection

- GDA2020 MGA zone 5X (EPSG: 785X)
 GDA2020 VicGrid (EPSG: 7899)
 GDA94 MGA zone 5X (EPSG: 2835X)
 GDA94 VicGrid (EPSG: 3111)
 Web Mercator (EPSG: 3857)
 Other (please specify)

Other Custom Products

Are there any other required formats not covered above?

e.g.: Custom file naming, downsampled tiles or mosaics, an Open Street Maps or Google Web Mercator tile cache, etc.

The following pages are used to specify your required tile size, resolution, quality considerations and height displacement for each capture area. If you don't need separate rural and towns capture, please complete the first section only.

2. Entire Capture Area or Rural Capture

Select [x] the desired specs below.

Tile Size

- 1 km Other (please specify)
- 2 km (due to TIFF file size concerns, ≥ 20 cm resolution only)

Spectral Range

- True Colour only (RGB) True Colour and Near Infra-red (RGBI) Near Infra-red only (IR)

Resolution

- 6.0 cm (ground level detail, recommended for municipal council applications such as asset management, mapping of building footprints and road infrastructure projects, less efficient to capture)
- 7.5 cm (some ground level detail, generally the highest resolution that can be captured efficiently over large areas)
- 10 cm (very detailed feature recognition, potential for engineering/survey applications, generation of 0.5m contours)
- 15 cm (detailed feature recognition, generation of 1m contours)
- 20 cm (very good feature recognition, monitoring urban changes or forestry activities)
- Other (please identify resolution required)

Quality Considerations

	High	Medium	Low
Spatial Accuracy	<input type="checkbox"/> ± 2 pixels	<input type="checkbox"/> ± 4 pixels	<input type="checkbox"/> >4 pixels
Colour Balancing	<input type="checkbox"/> Complete	<input type="checkbox"/> Partial	<input type="checkbox"/> Not Required
Edge Matching	<input type="checkbox"/> Seamless	<input type="checkbox"/> Partial	<input type="checkbox"/> Not Required

Height Displacement

This section relates to your acceptance of height displacement such as building lean expressed as a ratio of height to horizontal displacement. Select [x] the most suitable. If a subset of this area has more stringent height displacement requirements, you may select a second option.

*Increased tolerance for lean can reduce costs. For further guidance, please request the **Height Displacement Theory, Specifications and Examples** document.*

- 2:1 - Potential for extreme lean of elevated features.
Typically used for flat terrain with minimal vertical structures (e.g.: Flat terrain with sparse population/buildings).
- 2.5:1 - Some lean of elevated features is acceptable.
Typically, for areas with a number of vertical structures (e.g.: Suburban and rural townships with minimal tall buildings).
- 4:1 - Minimal lean of elevated features is acceptable.
Typically, in areas of a high number of tall vertical structures (e.g.: Metropolitan/CDB areas with buildings 5-40m in height).
- 6:1 - Near vertical view of elevated features is required.

If a subset of this area of interest has more stringent height displacement considerations, please supply the extent filename below.

.shp

3. Urban / Towns Capture

Select [x] the desired specs below.

Tile Size

- 1 km Other (please specify)
- 2 km (due to TIFF file size concerns, ≥ 20 cm resolution only)

Spectral Range

- True Colour only (RGB) True Colour and Near Infra-red (RGBI) Near Infra-red only (IR)

Resolution

- 6.0 cm (ground level detail, recommended for municipal council applications such as asset management, mapping of building footprints and road infrastructure projects, less efficient to capture)
- 7.5 cm (some ground level detail, generally the highest resolution that can be captured efficiently over large areas)
- 10 cm (very detailed feature recognition, potential for engineering/survey applications, generation of 0.5m contours)
- 15 cm (detailed feature recognition, generation of 1m contours)
- 20 cm (very good feature recognition, monitoring urban changes or forestry activities)
- Other (please identify resolution required)

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Spatial Accuracy	<input type="checkbox"/> ± 2 pixels	<input type="checkbox"/> ± 4 pixels	<input type="checkbox"/> >4 pixels
Colour Balancing	<input type="checkbox"/> Complete	<input type="checkbox"/> Partial	<input type="checkbox"/> Not Required
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Technical Specifications: Elevation

The section below is used to specify your point cloud and DEM requirements for LiDAR surveys.

CIP generally recommends the following specifications for elevation surveys where the primary product will be the DEM:

LiDAR for Rural DEM Creation

4 pts/m² point/pulse density
± 10 cm vertical accuracy (68% conf., 1 σ)
Level 2 classification
4+ returns (terrain dependant), 40° scan angle
1 m DEM, no contours

1. Point Cloud

Select [x] the desired specification below.

Minimum Point Density (Pulses Emitted)

- 4 pts/m² (suitable for catchment studies, DEM creation)
- 8 pts/m² (recommended for vegetation mapping, urban areas)
- 16 pts/m² (high density point clouds, such as over smaller urban areas)
- 30 pts/m² (very high density point clouds, special projects only)
- Other (please specify)

Vertical Accuracy (RMSE at 68% Confidence Interval / 1 σ)

ICSM Classification

- Level 2 (98% accuracy of ground point classification)
- Level 2+ (98% accuracy of ground and building points)
- Other (please specify)

Further Specifications

- 4+ returns (terrain dependant), 40° scan angle
- Other (please specify)

2. Raster Elevation Data

Select [x] the desired specification below.

DEM Resolution

- 1 m (CIP recommended)
- 2 m
- Other (please specify)

Contours

Do you also require contours to be derived from the DEM?

- Yes No

If so, please specify contour interval (recommended interval = $\frac{1}{2}$ DEM Resolution)

 m

Technical Specifications: 3D Photogrammetric Mesh

The section below is used to specify your requirements for a 3D photogrammetric mesh (aka photomesh, textured mesh, integrated mesh, 3D photography, 3D reality mesh). CIP prefers that low to medium resolution options adhere to a 500 m tile index, but we are happy to arrange high-resolution options bounded by irregular extents.

CIP generally recommends the following specifications for photogrammetric mesh products:

Digital Products

Esri Scene Layer Package (SLPK)
Cesium Tiles
Collada DAE

Medium-Res Photomesh

500 m tile size
7.5 cm at nadir resolution
No surface level improvement

High-Res Photomesh

500 m tile size (with part tiles)
2 cm resolution
High street surface level improvement

1. Digital Products

Select [x] the desired formats below.

- | | |
|--|--|
| <input type="checkbox"/> Esri Scene Layer Package (SLPK) | <input type="checkbox"/> Cesium Tiles |
| <input type="checkbox"/> Bentley 3MX | <input type="checkbox"/> Collada DAE |
| <input type="checkbox"/> Terra Explorer 3DML | <input type="checkbox"/> Wavefront OBJ |
| <input type="checkbox"/> LODTree | <input type="checkbox"/> OpenSceneGraph Multi-Res. Textured Model (OSGB) |
| <input type="checkbox"/> Other (please specify) | |

2. Photomesh Specifications

Select [x] the desired specs below.

Tile Size (for tiled formats)

- | | |
|--------------------------------|---|
| <input type="checkbox"/> 500 m | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> 1 km | |

Resolution

- 2.0 cm (highly detailed, suitable for activity centres, usually captured by helicopter, potential privacy concerns)
- 7.5 cm (medium detail, suitable for whole township capture, usually captured with fixed wing in two directions)
- Other (please identify resolution required)

3. Surface Level Improvement

Do you require a portion of your project to have surface level improvement?

Photomeshes from aerial capture are not suitable for viewing at low angles. Ground level photography can be added to a project to improve a subset such that it is viewable from the street. This can be expensive and is billed per linear kilometre one-side.

- Yes No

If so, please supply the extent filename below.

.shp

Budget and Partnering

The section below relates to the financial constraints placed upon your project.

1. Budget Planning

Do you require a price estimate before going for a request for quote?

- Yes No

When do you require the price estimate by?

dd/mm/yyyy

Partners are expected to **confirm their participation within 1-2 weeks of receiving final cost share from CIP**. If this period is insufficient, within what time period are you able to give the go ahead that you'd like to become a partner?

2. Budget

Select [x] which of the following best describes your budget scenario.

The budget information provided below is for internal use only for planning purposes and will not be disclosed to providers or other partners without your prior approval.

- Fixed budget

\$

- Indicative budget only

Indicative \$

- Other (please specify)

3. Formal Quote or Pre-Approval

In addition to a quote via email, will you require a **formal written quote document** from DELWP prior to making a purchase order?

- Yes No

If the final cost share (after contractor quotes are returned and evaluated) is under the budget amount specified, can this be used as your **confirmation of your acceptance** of becoming a partner?

By removing the need for later confirmation, CIP can reduce the number of delays between Expression of Interest and project commencement. Regardless of your selection here, CIP will still endeavour to reduce partner share at all opportunities.

- Yes No

4. Additional Partners

Have you contacted other possible partners who may be interested? If so who?

Additional purchase partners reduce the cost via sharing. Whilst CIP will coordinate the process, being aware of any other interested parties up front can expedite the process.

Final Remarks

The section below offers the potential partner a chance to add any additional notes.

1. Special Requirements or Considerations

Are there any other special requirements or considerations that were not covered above?

e.g.: Time of day; leaf-off; consideration of environmental factors such as flood, drought or bushfire; delivery date required to meet specific project deadlines; etc.

2. Additional Products

Are there any other required products that were not covered above?

e.g.: Supply of oblique photography which may be captured at the same time. Additional derived products such as feature extraction, low-res "as-is" 3D photomesh from an aerial photography project, volumetric assessment, vegetation extent or NDVI.

3. Submission

Once finished, please submit your application as follows:

Return to: coordinated.imagery@delwp.vic.gov.au

or Coordinated Imagery Program
Land Information & Spatial Services,
Dept. of Environment, Land, Water & Planning
PO Box 500,
East Melbourne Vic 3002

Inquiries: (03) 9194 0204