Aerial and Remote Data Standard Specifications – ARD-CT001

1.   GENERAL

This Standard Specification sets out the requirements for aerial and remote data capture.

This includes but is not limited to;
- Aerial Imagery
- Terrestrial, Mobile or Airborne Laser Scanning
- Lidar
- Stereo Imagery or 3D DSM

The Contractor shall comply with the requirements of:

Engineering Survey Standard SUR-CT003	https://www.dpti.sa.gov.au/standards/survey
Survey String Identifiers	https://www.dpti.sa.gov.au/standards/survey
Civil Aviation Safety Authority Regulations	https://www.casa.gov.au/landing-page/rules-and-regulations
Geospatial Project Report	https://www.dpti.sa.gov.au/standards/survey

2.   COORDINATE PROJECTIONS AND DATUM'S

Placement of control marks shall meet the accuracy requirements outlined in the Engineering Survey Standard SUR-CT003

2.1 Horizontal Datum

Unless specified otherwise in the Project Brief, the horizontal datum shall be GDA94 using projection - Map Grid of Australia (MGA) or SA Lambert Conic Conformal (LCC) should the coverage exceed one MGA zone.

All data files shall have a referenced coordinate system.

2.2 Vertical Datum

Unless specified otherwise in the Project Brief, datasets containing height values shall adopt the Australian Height Datum (AHD) as the vertical datum.

3.   DATA ACCURACY

3.1 Documenting Data Accuracy

All data deliverables shall be accompanied by a recommended data accuracy. Accuracies shall be defined in metres and satisfy a 95% confidence level. Accuracy statements shall be documented in the appropriate metadata template and project transmittal report.

Accuracy claims shall be supported with evidence appropriate to the method of capture which shall include separate checks on the model surface covering both horizontal and vertical positioning residuals.

4.   DELIVERABLES

4.1 Aerial Imagery

All standards below shall apply unless specified otherwise in the project brief.

Contractors are responsible for all flight planning, manifests and approvals.

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Contractors must comply with all relevant Civil Aviation Authority Safety Authority (CASA) requirements and must be appropriately licensed to carry out such work including for drone operation.

A. Digital File Format

Aerial imagery shall be supplied in .ECW format as a preference, if specified in the project brief .jpg2000 or geoTiff may also be accepted.

B. Spectral Resolution

Photogrammetric digital camera providing 3 Bands - Red, Green, Blue and Panchromatic if applicable.

C. Spatial Resolution

Digital Imagery resolution will be defined as a Ground Sampling Distance (GSD) in the project brief.

D. Radiometric Resolution

8 Bit.

E. Ortho-Rectification

Aerial imagery shall be rectified and calibrated to the specified datum. Aspect of all structures obscuring adjacent ground level features is to be minimised. There is to be no cloud, cloud shadow or smoke haze obscuring the image.

F. Image Compression

Imagery compression shall not exceed 15 times and should minimise image quality loss.

G. Intellectual Property Agreement

All data supplied by the contractor under the Panel Agreement shall become the property of DPTI and shall not be copied or reproduced by the contractor without prior written approval by the principal.

4.2 Laser Scanned And Remote Data Capture

All standards below shall apply unless specified otherwise in the project brief.

A. Digital File Format

String based data shall comply with the DPTI Engineering Survey Standard Specification coding requirements. Point cloud data shall be provided in a .las or .fbx file format as specified in the project brief.

B. File Size And Cloud Viewing

Determinations shall be made on an appropriate file size ensuring suitable usability and rendering performance in the intended application.

C. Shadowing Or Low Resolution Areas

Efforts should be made to minimise the effect of shadowing and subsequent accuracy loss. Low accuracy areas and shadowing are to be detailed in the project report where present. Areas may be requested to be depicted in the model by a closed loop string.

4.3 Items To Be Supplied By Contractor

The Contractor shall supply the following items:

- Digital data as specified above unless detailed otherwise in the project brief:

- Project Report (presented in the following order):
    o Date

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- o Job Title, Number & Description
- o Project Lead & Manager
- o Contact Details
- o Data Files, Revision & Format
- o Horizontal Coordinate System
- o Vertical Datum
- o Nominated Data Accuracy
- o Metadata Standard
- o Capture Scale
- o Data Origin
- o Production Methodology
- o Exception Report: details of any abnormalities relating to the project.

5. DATA PRODUCTION METHODOLOGY

5.1 General

In order to achieve the required standards, methodology used shall be documented to support accuracy statements and provide context for the use/ application of GIS information. Details of this shall be included as a brief summary in the Geospatial Project Report.

5.2 Data Origin

Methodology statements shall include the origin of datasets. The contractor shall nominate whether information has been captured via GPS, digitised/ drafted or via automated feature extraction techniques etc. Details shall be noted in the Project Report.

5.3 Capture Scale

Methodology statements shall include the captured scale range of datasets for Data Quality. Details shall be noted in the Project Report.

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