

SURVEYORS ORDINANCE 1960

(No. 22 of 1960)

SURVEYORS (CONDUCT OF AIRBORNE SURVEYS)

REGULATIONS 2017

(G.N.S. 9 OF 2017)

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In exercise of the powers conferred by section 19 of the Surveyors Ordinance 1960 [No. 22 of 1960], the Surveyors Board, with the approval of the State Secretary, makes the following regulations:

Citation and commencement

1. (1) These regulations may be cited as the Surveyors (Conduct of Airborne Surveys) Regulations 2017.

(2) These Regulations come into operation on the date of its publication in the *Gazette*. (c.i.f. 13 July 2017)

Interpretation

2. In these Regulations unless the context otherwise requires:-

"Aerial Surveys" means aerial imagery survey, LiDAR survey and SAR survey which require the correct interrelation of boundaries or of boundary marks and the making and recording of all measurements and calculations relevant thereto and the drawing and reproduction of plans therefrom;

"Board" means the Surveyors Board established under section 3 of the Ordinance;

"DEM" means Digital Elevation Model and it includes both DSM and DTM;

"Director" means the Director of Lands and Surveys Department in the State and includes any officer duly authorised to act in that behalf;

"DSM" means Digital Surface Model;

"DTM" means Digital Terrain Model;

"DWG" means a drawing binary file used for storing design data and metadata;

"E.S.P." means Engineering Survey Paper containing instruction by the Director to carry out the topographical or engineering surveys by Licensed Surveyor;

"JUPEM" means the Jabatan Ukur dan Pemetaan Malaysia;

"LAS" means LASer (LAS) file as defined by The American Society for Photogrammetry & Remote Sensing (ASPRS);

"Licensed Surveyor" means a registered surveyor licensed in accordance with section 10 of the Ordinance;

"LiDAR" means Light Detection And Ranging;

"Ordinance" means the Surveyors Ordinance 1960;

"RMS" means Root Mean Square;

"R.S.O." means Borneo Rectified Skew Orthomorphic projection;

"SAR" means Synthetic Aperture Radar.

Application

3. These Regulations shall apply only for all manned or unmanned aerial imagery survey (film based or digital), LiDAR and SAR survey.

Personal direction and supervision

4. Every airborne surveys work shall be carried out on behalf of the Director and made under the immediate personal direction and supervision of a Licensed Surveyor and in strict accordance with these Regulations.

E.S.P.

5. (1) A Licensed Surveyor shall apply for an E.S.P. to commence a survey to the Director and such application shall set out the purpose and extent of the proposed survey area.

(2) The Licensed Surveyor shall obtain other necessary permissions and clearance from relevant authorities prior to the survey.

Calibration

6. (1) All instruments must have a certificate of calibration from the manufacturer of not more than five years from the date of survey.

(2) Standard calibration techniques should be completed prior to and after the acquisition of data.

Datum

7. All positioning surveys including the on-board Airborne Global Positioning System shall be measured relative to the existing Lands and Surveys Department's SaGPSNet95 network as the primary ground reference stations. The orthometric heights shall be derived from the Malaysia MyGEOID or benchmarks established by JUPEM.

Processing of data

8. The Licensed Surveyor shall provide a detail methodology in the processing of the data set and list out all the various software used. The accuracy, in terms of RMS, must be provided and the result shall be in R.S.O. system.

LiDAR and SAR products

9. The standard products from LiDAR and SAR survey shall be DEM of point clouds LAS format in R.S.O. system.

Imagery product

10. The standard products from imagery survey shall be orthophotos mosaic of images in GeoTIFF format in R.S.O. system.

Survey plans

11. Survey plans shall be prepared in a format with title blocks agreed by the client. All legends and symbols used in the plans shall be those currently used by the profession. The plans shall show all relevant features that can be seen. The features will be extracted and digitised as vector lines provided in DWG format (separated by layers).

Submission of survey plans and records

12. The Licensed Surveyor shall submit a copy of the survey plan(s) and digital survey data to the Director.

Certification

13. Every survey plan shall bear a certification by the Licensed Surveyor in the following form:

"I, a surveyor licensed under the Surveyors Ordinance 1960, certify that the survey from which this plan has been prepared was carried out in the field in strict accordance with the Surveyors (Conduct of Airborne Surveys) Regulations 2017, and that this plan correctly represents the survey completed on the day of 20

Dated this day of , 20

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Licensed Surveyor