

GENERAL DATASET DESCRIPTION

LGSR Technical Series

Unmanned Aerial Vehicle (UAV) data acquired over a subtropical forest area of the UFSM campus Frederico Westphalen, on December 2, 2019, Rio Grande do Sul, Brazil



DEC., 2 2019

LGSR/UFSM campus Frederico Westphalen

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Title:

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Keywords

Images, Drone, UAV, Forest, UFSM, Remote Sensing, GIS.

Data description:

The data were acquired from an aerial survey conducted with an Unmanned Aerial Vehicle (UAV, also *Drone*) covering a forest area of the Federal University of Santa Maria – UFSM in the municipality of Frederico Westphalen, in the Rio Grande do Sul, Brazil (Figure 1). The climate of the region is subtropical (Cfa in the Köppen-Geiger classification) with an average annual temperature of 18 °C and annual precipitation of 1919 mm (Alvares et al., 2013). The rainfall is well distributed throughout the year.

Figure 1. Location of the site of data acquisition. Based on Google Earth Pro scenes. The KML and KMZ are appended to the files.



UAV and camera settings for the acquisition (Specifications Table):

Parameters	Specification/value
Date (YYYYMMDD):	20191202
Time of day (BRT = -3)	12:45 h
UAV – Drone - Camera	Phantom 4
Fly high (meters above ground)	250 m
View angle	90° automatic mode.
Sky conditions	(x) Clear sky () Low cloud coverage (some clouds) () Completely cloudy
Wind condition	(x) no wind () Low speed () High speed wind
Approximate data acquisition duration	30 minutes
Total of photographs acquired	Sensor 1/2.3” CMOS Effective pixels:12.4 M Lens FOV 94° 20 mm (35 mm format equivalent) f/2.8 focus at ∞
Across track coverage	80%
Cross-track coverage	80%
Fly planning software	Drone Deploy

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An example of the mosaic and DEM is showed below (Figure 2 e Figura 3), referring to a screen capture of Agisoft Metashape (Agisoft LLC, 11 Degtyarniy per., St. Petersburg, Russia, 191144) and, the workflow adopted.

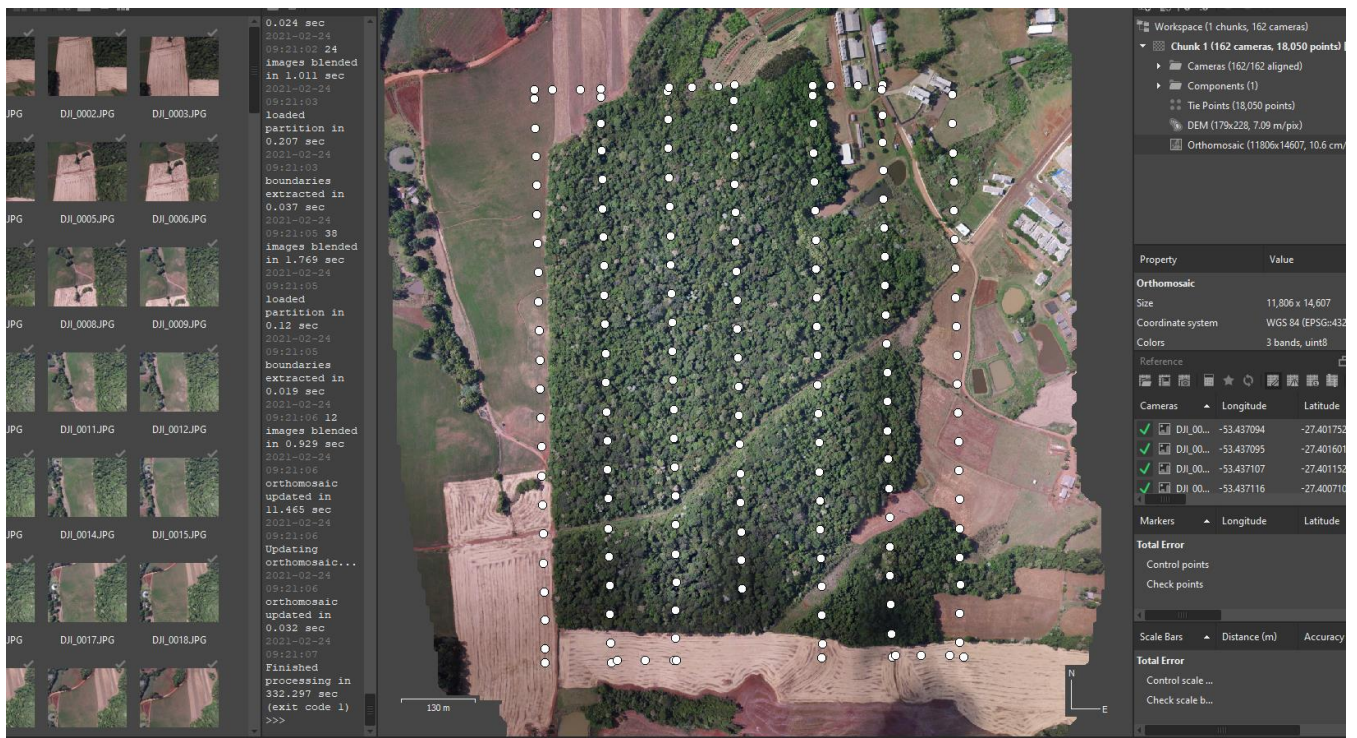


Figure 2. The capture of an orthomosaic in the processing workflow of X3 camera. Lowest quality was applied.

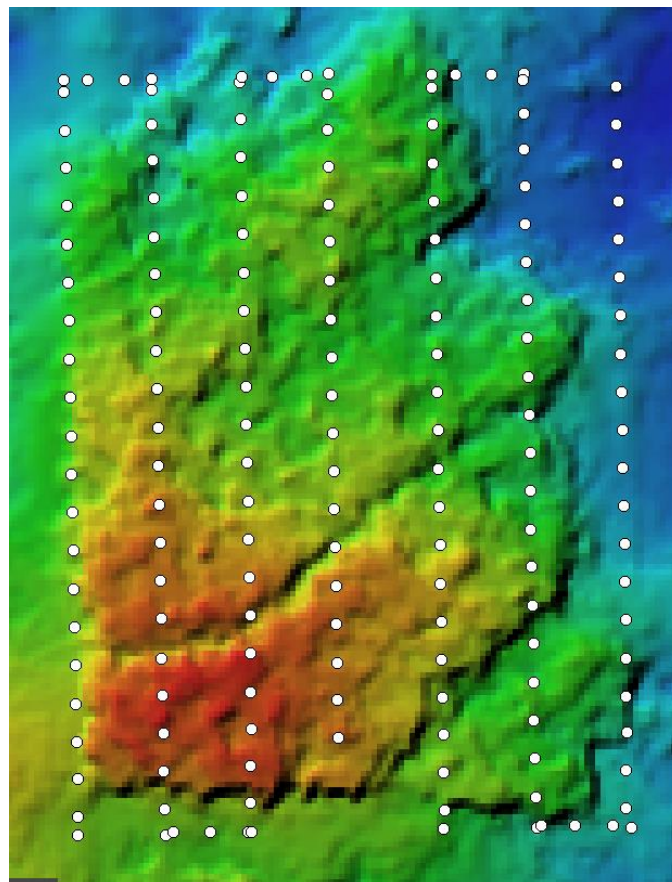


Figure 3. The capture of an DEM in the processing workflow of X3 camera. Lowest quality was applied.

References to the main project/publications:

Breunig, Fabio Marcelo. Combination of UAV, PlanetScope, Landsat, and Sentinel-2 images to precision silviculture and agriculture in a subtropical region. Project. National Council for Scientific and Technological Development (CNPq). Grant 305084/2020-8

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Other considerations

PS. A pdf file is also attached with this description.

Declaration of Competing Interest

The author declares that he has no competing interests or personal relationships that have or could be perceived to have influenced the work reported in this report.

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