Standard Operations Procedure

Drone Survey for Litter Assessment

Date: 12.08.2024

Author: Carolin Leluschko

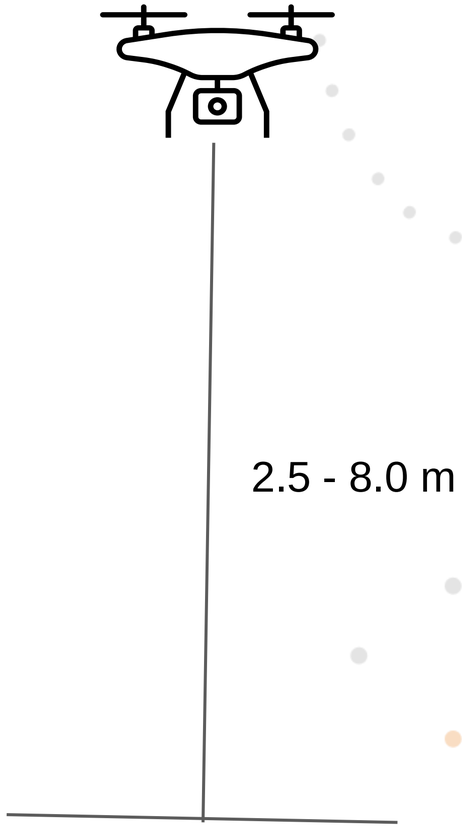
Drone Survey – General Information

How to acquire drone images for AI enhanced litter assessment

1 **Target spatial resolution ~ 0.2cm/px**

2 **Stable light conditions yield better results**

3 **Images should contain georeferenced point**



Drone Survey – Equipment

How to acquire drone images for AI enhanced litter assessment

- Drone platform with stable flight capacities and stabilized gimble for nadir looking sensor operation
- For geo-referencing of DGPS data: Ground reference points
- Suggested Drone and sensor* models:

Drone / Sensor*	Suggested Altitude	Camera Resolution
DJI 4 Pro	6m	20 MPIX
DJI P4 Multispectral	2.5m	2.12 MPIX
Micasense Altum* Model - AL04	4.6m	3.2 MPIX
Parrot SEQUOIA+	2m	16 MPIX
DJI Zenmuse XT2* Visual	8.6m	12 MPIX
DJI M2E-ADV Visual	8m	48 MPIX

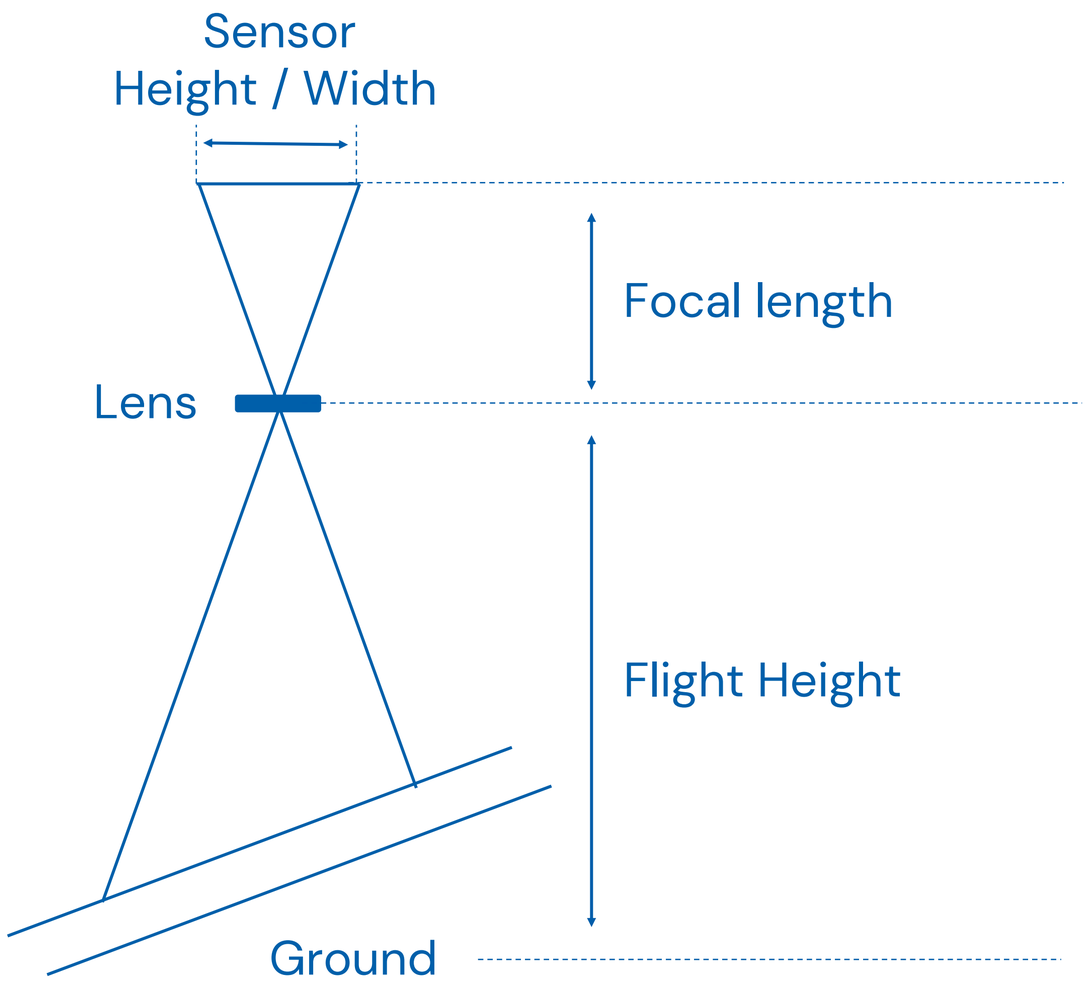
Drone Survey – Spatial Resolution

How to acquire drone images for AI enhanced litter assessment

$$GSD = \frac{H}{f} \cdot a$$

GSD – Ground Sample Distance

a = size of pixel (in mm)
H = flight height / altitude
f = focal length



Drone Survey – Guidelines

How to acquire drone images for AI enhanced litter assessment

- The operator is responsible to obtain the required flight permits
- Stable light conditions are required for good results
  → avoid scenes where half of it is covered with shadows
- Images have to be captured in nadir mode, looking straight downwards
- Overlap of drone photos should be 80% in lateral and 75% in longitudinal direction
- The area of interest should be as untouched as possible until drone images are taken

Questions?

Contact: litter_assessment_support@dfki.de

imagine-ai.eu

IiMagine receives funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101058625