Thermal Camera Payload

Visualising inlets and flooded areas

Summary:

The lightweight LWIR (LongWave InfraRed) payload is capable of mapping rivers, streams and wetlands.

Thermal payload mounted on gimbal

The Payload:

The payload consists of a FLIR TAU2 radiometric core, an INS module logging yaw/pitch/roll angles, and an external heated calibrator providing a uniform calibration target, increasing the temperature accuracy for absolute temperature measurement by up to 70%. The payload is mounted on a 3-axis gimbal.

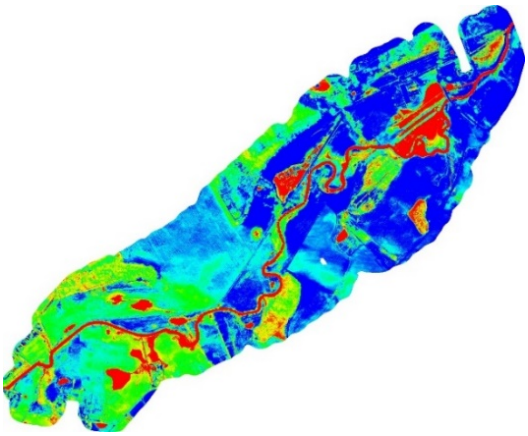
FLIR TAU2 LWIR	
Spectral Band	7.5 - 13.5 µm
Resolution	640x512
Frame Rate	8hz
Lense/FOV	13mm/45°
Weight incl. gimbal	<900g
Precision of absolute temperature measurement	1-2°C
Recommended flight speed, depending on height	4-8 m/s

Spatial Resolution	
Height [m]	GSD [cm/pix]
40	5,2
80	10,4
120	15,5

Applications:

The payload can be used to efficiently map rivers, wetlands and lakes with focus on

- River inlets – Unknown or illegal inlets to streams and rivers, will effectivly be revealed
- Groundwater influx – If sufficient influx is present is streams or rivers, areas can be identified, as a thermal difference will apear downstrem from the influx zone
- Flooding and wetlands – Due to the large heat capacity of water, flooded areas warm and cool much slower than land areas and can effectively be mapped with the thermal camera payload.



Red areas are flooded (warmer temperatures during a cold winter night)

Inlet to stream, from production facility

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