CLAIMS

1. A method for detecting glass wall with reflective surface for an autonomous system, the method comprising:

deploying at least one IR imaging device and at least one IR emitter on the autonomous system, wherein the IR imaging device comprises a field-of-view (FOV) and is sensitive to long-wavelength infrared (LWIR) band of 8-15 μm;

the IR thermal emitter comprises a resistor array configured to emit an IR thermal signature in the 8-15 μm band by resistive heating, and, wherein the IR thermal signature is located outside of the FOV;

detecting presence of the IR thermal signature that reflects on the reflective surface within the FOV; and

determining a distance and angle of the autonomous system from the reflective surface via triangulation based on the spatial displacement of the reflected IR thermal signature within the FOV, thereby identifying the reflective surface as the glass wall..

2. The method of Claim 1, wherein each IR emitter comprising resistors arranged to emits the thermal signature.

3. The method of Claim 1, wherein the IR emitter comprising a resistor array arranged to form the thermal signature.

4. The method of Claim 1, wherein the autonomous system determines the distance and angle based on triangulation method.

5. A sensor assembly of an autonomous system adapted for detecting glass wall, the sensor assembly comprising:

at least one infrared (IR) thermal sensor having a Field-of-View (FOV) and is sensitive to long-wavelength infrared (LWIR) band of 8-15 μm;

at least one IR emitter that comprises a resistor array configured to operationally emits a thermal signature in the 8-15 μm band by resistive heating, wherein the IR thermal signature is located outside of the FOV;

whereby operationally, when IR thermal signature is reflected on a reflected surface and the reflected IR thermal signature is captured within the FOV, the sensor assembly determines a distance and angle of the IR sensor from the reflective surface and the reflective surface is identified as a glass wall.

6. The sensor assembly according to Claim 5, each of the IR emitter comprises a resistor array, each resistor unit of the resistor array form a pixel of the thermal signature.

7. The sensor assembly according to Claim 5, wherein the distance and angle are determined through triangulation.

8. An autonomous system having a sensor assembly in accordance with any one of Claims 5-7.