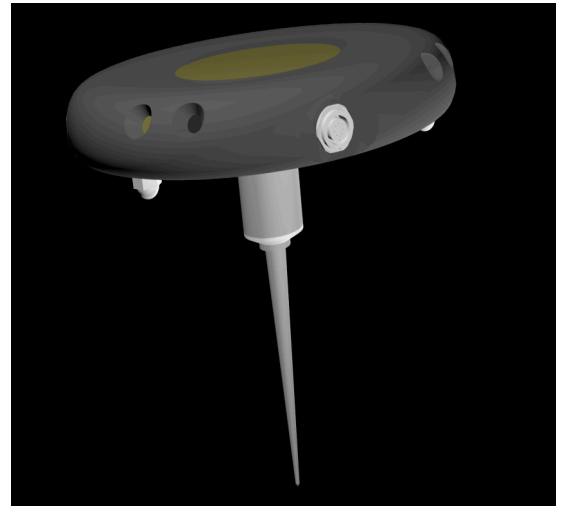


AreaDetect - Above ground multi-sensor unit

The above ground multi-sensor unit comprises multiple integrated sensors:

- acoustic sensor mainly for detection and geolocation of vehicles, providing information which can allow classification.
- seismic sensor vibration detection of footsteps and vehicles, providing data to enable vehicle classification.
- magnetic sensor detection of vehicles passing on road or track.
- image sensor the current camera system is based on the use of four cameras each covering 90 degrees. Software only pan and tilt are optional.
- triaxial accelerometers – the key sensor which allows movement detection in three directions which assists in determining false alarms and detecting if the sensor is moved.
- GPS subsystem for self-geolocation and easy deployment.



Specification

- simple system with no moving parts
- high resolution with multi-Megapixels
- reduced power for longer running time
- small size and weight for ease of deployment
- long life battery with optional solar charger

Capabilities

- For communications, the sensors employ a fault tolerant mesh networking protocol. The transmission will be spread spectrum, low power wireless and capable of encryption. As the sensor transmission antenna is omni directional spread spectrum and low power will provide a very low Probability of Intercept (POI). Because of the covert nature of the sensor and deployment close to the ground, the typical range is 200 metres. To provide long range communications, the sensors will talk to one or more Hubs, each with a radio relay.
- For communications with the sensors, the Hubs will employ identical circuitry to that of the sensors. For communications with either the central site or a second Hub, the transmitter will be of higher power (1 watt) and with a physical higher, directional antenna which will cover a line of sight range of 40-60 km, depending on vegetation, directivity and height of the antenna.
- The central site transceiver antenna incorporates both an omni-directional and a high sensitivity antenna to match both wide area and directional applications.

Components

- The multi-sensor unit comprises a sensor module with a mix of required sensors.
- The multi-sensor unit can be housed in a six-pack sensor module with built-in charger and/or radio relay with 20 km line of sight communications.