SELEX GALILEO

A Finmeccanica Company

HYDRA
ACOUSTIC SENSOR

Dynamic real-time detection, location and tracking of targets: Hydra Acoustic sensors provide non line-of-sight surveillance capability to the tactical operator.

KEY BENEFITS

- Utilises the common Hydra node
- Provides detection, location and tracking of threats
- 24 hour sensing
- Low power consumption
- Beyond line-of-sight, all-terrain surveillance
- Low false alarm rates
- Early cueing of imaging sensors.

ADVANCED CAPABILITY WITH PROVEN PEDIGREE

Designed originally as part of a UK MoD research programme, the Hydra acoustic sensors have been tailored specifically to detect and locate vehicle targets in a variety of environmental conditions. This Sensing technology is provided in partnership with QinetiQ, one of the world's leading defence technology and security companies.

In association with

QinetiQ

HIGH RELIABILITY THROUGH DISTRIBUTED SENSING

Correlating and combining data from multiple sensors, the distributed acoustic sensors can locate a target accurately at any location within and around the distributed sensor network, and track its position as it moves through the sensor field. False alarms are eradicated by the target tracking process.

NON LINE-OF-SIGHT SENSING

Reliable operation in a variety of terrains, including open land, scrubland, wooded areas and around buildings: the acoustic sensors allow early location of targets beyond line-of-sight.

REAL-TIME AREA SURVEILLANCE

As part of the Hydra sensing network, the low power acoustic sensors provide an accurate and continuous picture of activity within the area of interest.

CROSS CUEING OF OTHER HYDRA SENSORS

When Hydra imaging sensors are deployed, acoustic sensors can be used to cue and point cameras onto the target via the wireless sensing network. This provides extended target identification.

Dynamic, real-time detection, location and tracking of vehicle targets

TECHNICAL SPECIFICATIONS

Hydra Acoustic sensor node

Operating Temp (standard)	-20°C to +65°C
Operating Temp (extended)	-40°C to +85°C
Humidity	< 95% non condensing PIR
Sensitivity settings	Low, Medium, High

Acoustic Detection ranges

Tracked vehicles	~ 1km
Heavy wheeled vehicles	~ 500m
Light wheeled vehicles	~ 50m
Airborne aircraft	~ 3km
Airborne helicopters	~ 3km
Tracking accuracy	~ 30m

HYDRA situational awareness tool

Hydra network sensing scenario

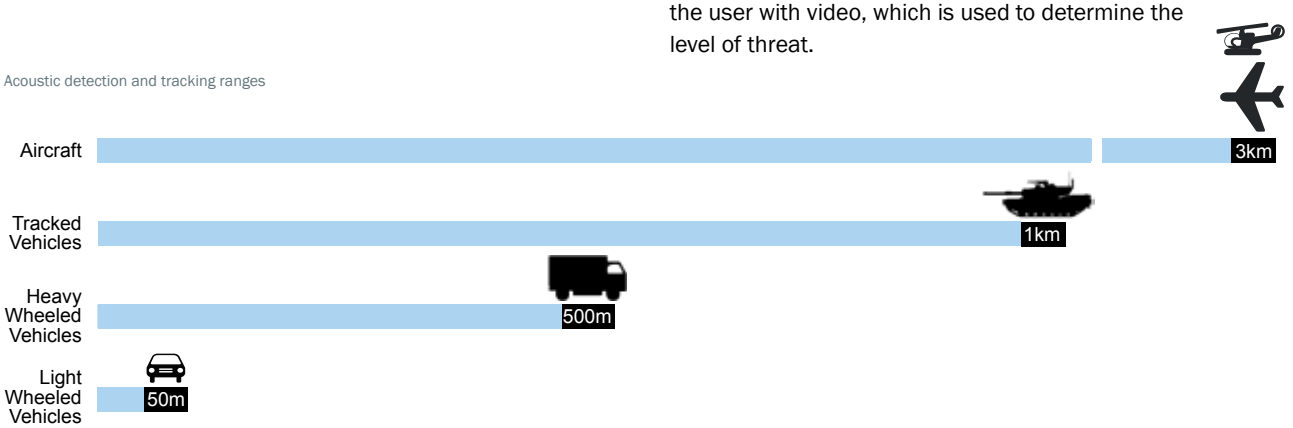
The scenario above illustrates how acoustic sensors can be utilised to maintain persistent surveillance of threats irrespective of the sensor positions and line-of-sight limitations.

The figure shows remote sensor nodes deployed to provide detection and real-time tracking of targets approaching a road junction. An acoustic sensor is deployed at each of the four approach roads to provide early detection. Target tracking within the sensor field is achieved by deployment of a fifth acoustic sensor, at the road junction.

When combined with other sensor types, acoustic tracking acts as an effective filter against instantaneous false detections. Operators will be able to observe the target behaviour and movements via the track information, ensuring total confidence of target detection validity.

If imaging nodes are deployed within the sensor field, they would be cued by the acoustic tracking, in order to provide the user with video, which is used to determine the level of threat.

Acoustic detection and tracking ranges



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