

# ACLOGUS-4

(ACoustic LOcalization of GUnshotS)



**INCOMING DIRECT FIRE POSES A THREAT TO THE VEHICLE AND, WHEN MANNED, TO ITS CREW.**

**TRADITIONAL ACOUSTIC SYSTEMS TO DETECT AND LOCALIZE INCOMING SMALL ARMS FIRE DO NOT WORK WHEN THE VEHICLE IS DRIVING, WHICH IS IN ESSENCE THE KEY TO SURVIVE ON THE BATTLEFIELD IN THE FIRST PLACE. THE LACK OF SITUATIONAL AWARENESS AFFECTS THE DECISION MAKING ON THE VEHICLE EITHER TO ATTACK OR LEAVE THE THEATRE.**

The ACLOGUS firmware, hosted on the passive CASTLE sensor node, is designed for the detection and localization of incoming small arms fire. This can be done in silent watch but also when the vehicle is driving.

By capturing the incoming shockwave signal, a shockwave warning is given with an angular accuracy of typically 120 degrees.

The very instant that also the corresponding muzzle blast noise arrives at the CASTLE sensor node, the angle is finally reduced to 2 degrees and the range is given with 10% accuracy in real time.

The four Acoustic Multi Mission Sensors (AMMS) in the CASTLE allow the advanced signal processing algorithms to distinguish platform induced noise from external audible events and to take into account the acoustic shadows or acoustic reflections created on a vehicle deck that is not flat.

The ACLOGUS firmware is also capable to localize the origin of a round up to a miss distance of approximately 200 meters from the vehicle, providing an acoustic umbrella of around 400 meters in diameter. Dismounted soldiers or other mobile platforms in the vicinity may benefit from this when radio networked.

In addition, the ACLOGUS firmware-based system is also capable of cueing a board camera or remote weapon station.

The time stamped localization is either displayed as a dot on the map or relative to the driver.

When desired, the ACLOGUS firmware-based system can be connected to a 3rd party BMS/C2.

The CASTLE loaded with ACLOGUS firmware offers proven easy integration on various vehicle platforms, e.g. UGV's, IFV's, light tactical vehicles and APC's.

## BENEFITS OF ACLOGUS

- Detection of small arms fire up to 1800m
- Localization of incoming small arms fire up to 1200m
- Robustness against acoustic shadows
- Operational when the vehicle is driving
- Sensor node not sticking out / low silhouette
- Low SWaP
- All weather capability (e.g. rain, fog and smoke), day and night
- Capable of cueing a camera or RWS

