



Active Radar Cooperating ARC-Find™

Resilience. Navigation. Awareness.

Navigation for Unmanned Aerial Systems

Resilient localisation for Unmanned Aerial Systems (UAS) is vital if they are to complete their mission when satellite navigation systems (GNSS) are temporarily unavailable, occluded by buildings, or have been actively blocked.

The ARC-Find™ micro radar from Cambridge Sensoriis provides a localisation capability based upon direct radar range measurement, that is independent of satellites and invulnerable to jamming mechanisms. Radar is also unaffected by poor visibility, lighting, and bad weather, unlike camera-based localisation.

The system is designed for high visibility between one or more compatible ARC radar. A Primary will report the range, bearing and elevation to other ARCs, whilst ignoring all radar reflections from background

A last mile resupply ground (or air) vehicle can locate the endpoint of a mission within centimetres, without the need for satellite positioning at either end, or inter communication, if the forward position has a Sensoriis ARC radar.

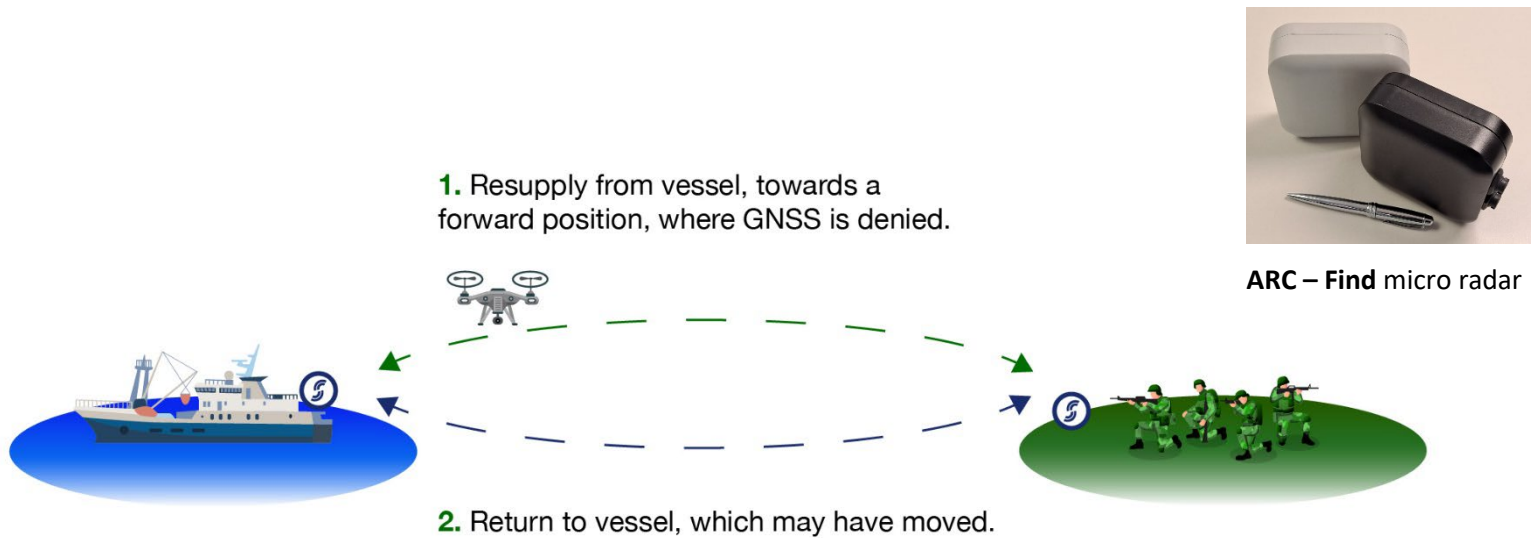
The UAS can then locate the endpoint and fly resupply missions. Equally the UAS can return origin through measurement of a further ARC radar. When from a vessel at sea these may necessarily have moved. ARC finds the current position and not that at take-off.

Each ARC device can be configured with a unique code that is reported over the radar carrier frequency.

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KEY FEATURES

Highly visible to compatible radar, and uniquely visible against other objects in the vicinity.

Supports 'Default Silent' technology. ARC remains silent, none transmitting, until interrogated by a compatible radar in a recognised encoded band. Used in military deployments where electronic radio stealth is required.

No moving parts, fully electronically controlled antennas arrays. Small Weight and Power, suitable for battery power.

Compatible with Sensoriis RadarAware™ radar products.

Reports message payload through the Application Programmers Interface or industry standard MAVLink.

SPECIFICATIONS

Maximum detection distance	Options: 60m, 120m, 240m, 500m ⁺ , 1000m ⁺
Range resolution	0.01 m
Angular Field of view Horizontal	130 deg
Angular Field of View Vertical	30 deg, or more at short range
Max # ARC end point radar, per Primary	4
Interface	RS232/422. Sensoriis API or MAVLink
Physical	
Dimensions (w.h.d)	120 x 120 x 45 mm
Weight	≈ 300 grams
Power supply	5Vdc (battery pack options available)
Environmental	
Ingress	IP67
Temperature	-20 to 60 degC

+ option under development