

MARSS

 NiDAR™ CUAS

Counter Unmanned Aerial Systems

THE WORLD'S FASTEST EVOLVING THREAT...

Unmanned Aerial Systems (UAS) represent an operational step-change in asymmetric warfare. They continue to demonstrate an ability to exploit gaps in conventional defenses' intel and surveillance and cause significant damage to national infrastructure and strategic resources. This is largely due to their highly effective autonomous hunt and strike capability. Constructed from readily available technology and easily accessible by hostile forces due to low cost, this threat continues to evolve in terms of autonomy, range, and destructive payload. As offensive measures evolve, so too must the defense of the those tasked with protecting critical civil and military infrastructure, assets, and people.



UAS THREAT CATEGORIES

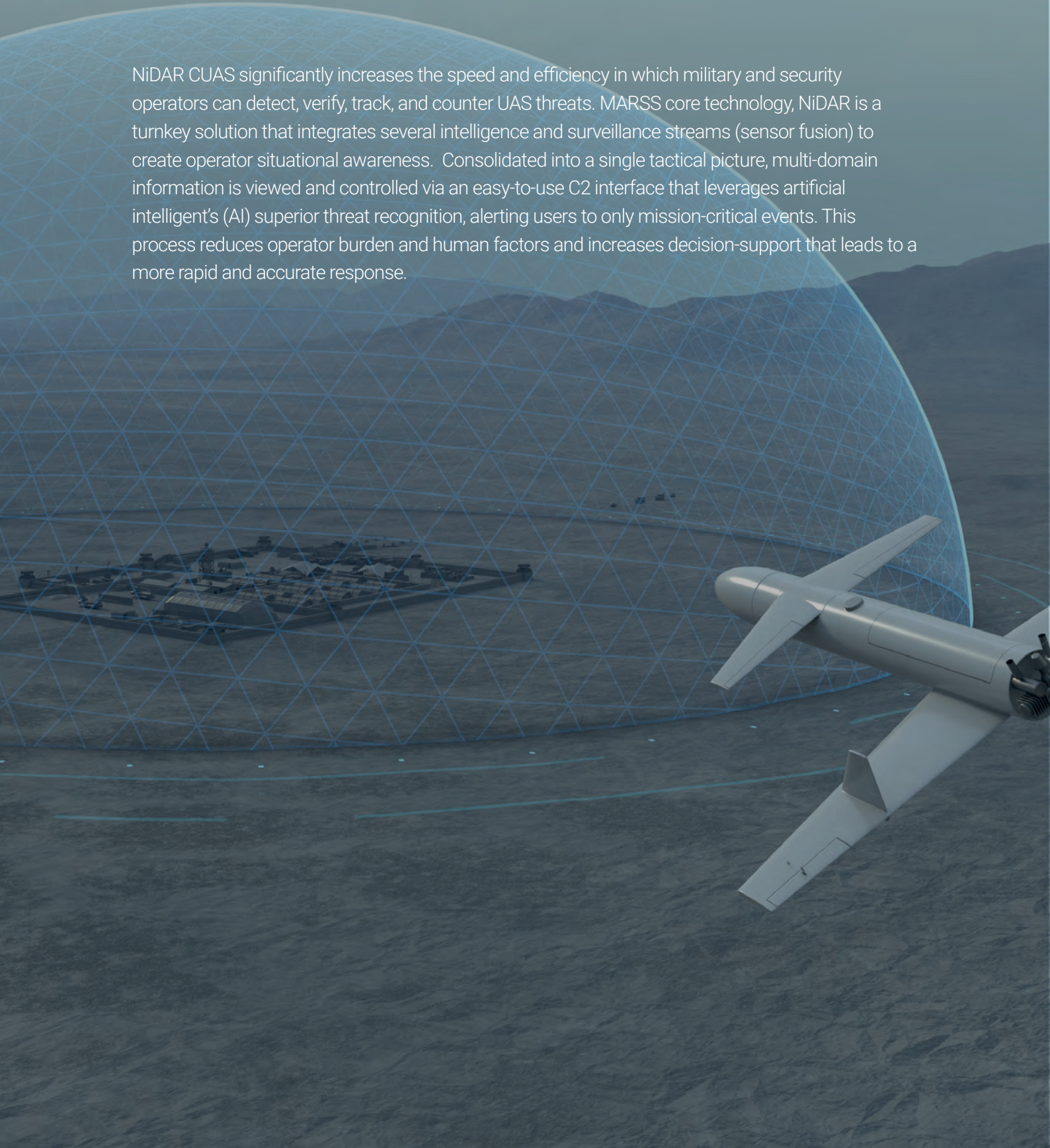
	CATEGORY	ALTITUDE	PAYLOAD	RADIUS	DEPLOYMENT
	MICRO	200ft AGL	200g - 2kg	5km LOS	Hand deployed, ISR mission
	CAT I	3,000ft AGL	2kg - 20kg	>25km LOS	Hand deployed, loitering munition
	CAT II	5,000ft AGL	20kg - 150kg	>25km LOS	Hand deployed, loitering munition
	CAT III 150kg - 600kg	18,000ft AGL	>150 kg	>200km LOS	Tactical formation
	CAT IV >600kg	65,000ft MSL	>600 kg	Unlimited BLOS	Operational theater



INTRODUCING NiDAR CUAS

A PURPOSE-BUILT SYSTEM CAPABLE OF FINDING AND DEFEATING UAS FROM UPWARDS OF 25KM+

NiDAR CUAS significantly increases the speed and efficiency in which military and security operators can detect, verify, track, and counter UAS threats. MARSS core technology, NiDAR is a turnkey solution that integrates several intelligence and surveillance streams (sensor fusion) to create operator situational awareness. Consolidated into a single tactical picture, multi-domain information is viewed and controlled via an easy-to-use C2 interface that leverages artificial intelligent's (AI) superior threat recognition, alerting users to only mission-critical events. This process reduces operator burden and human factors and increases decision-support that leads to a more rapid and accurate response.



NiDAR CUAS FEATURES/BENEFITS

INTEGRATES STATE-OF-THE-ART SENSORS

Several surveillance and intelligence streams work together in unison for real-time operator situational awareness

FULLY MODULAR AND SENSOR AGNOSTIC

Integrates with existing systems or latest sensor solutions. Highly scalable with growth capability based on requirements

24/7, 360-DEGREE PROTECTION

NiDAR is always on alert, monitoring for UAS threats day and night, protecting from all approaches, reducing human factors or errors

UTILIZES NiDAR AI ENABLED TRACKING

NiDAR AI optimizes radar detection and camera positioning to track fast moving UAS, ensuring operators always have a prime view of the threat

HARNESSES AI THREAT RECOGNITION

Analyses object pattern behaviour (over 1000 objects known), ensuring operators are only alerted to critical events.

INTUITIVE USER INTERFACE

Complex information is made simple, controlling multiple data sources with AI enabled decision-support. Includes blue force tracking

ACQUIRES DATA FROM PAST EVENTS

Utilizing machine learning, system becomes even more efficient with use, logging UAS speed, approach and manoeuvrability

FULLY INTEGRATED COUNTERMEASURES

Fixed or mobile systems capable of defeating fast, high manoeuvring targets with speed and accuracy.

NATIONAL AND MOBILE C2 UNITS

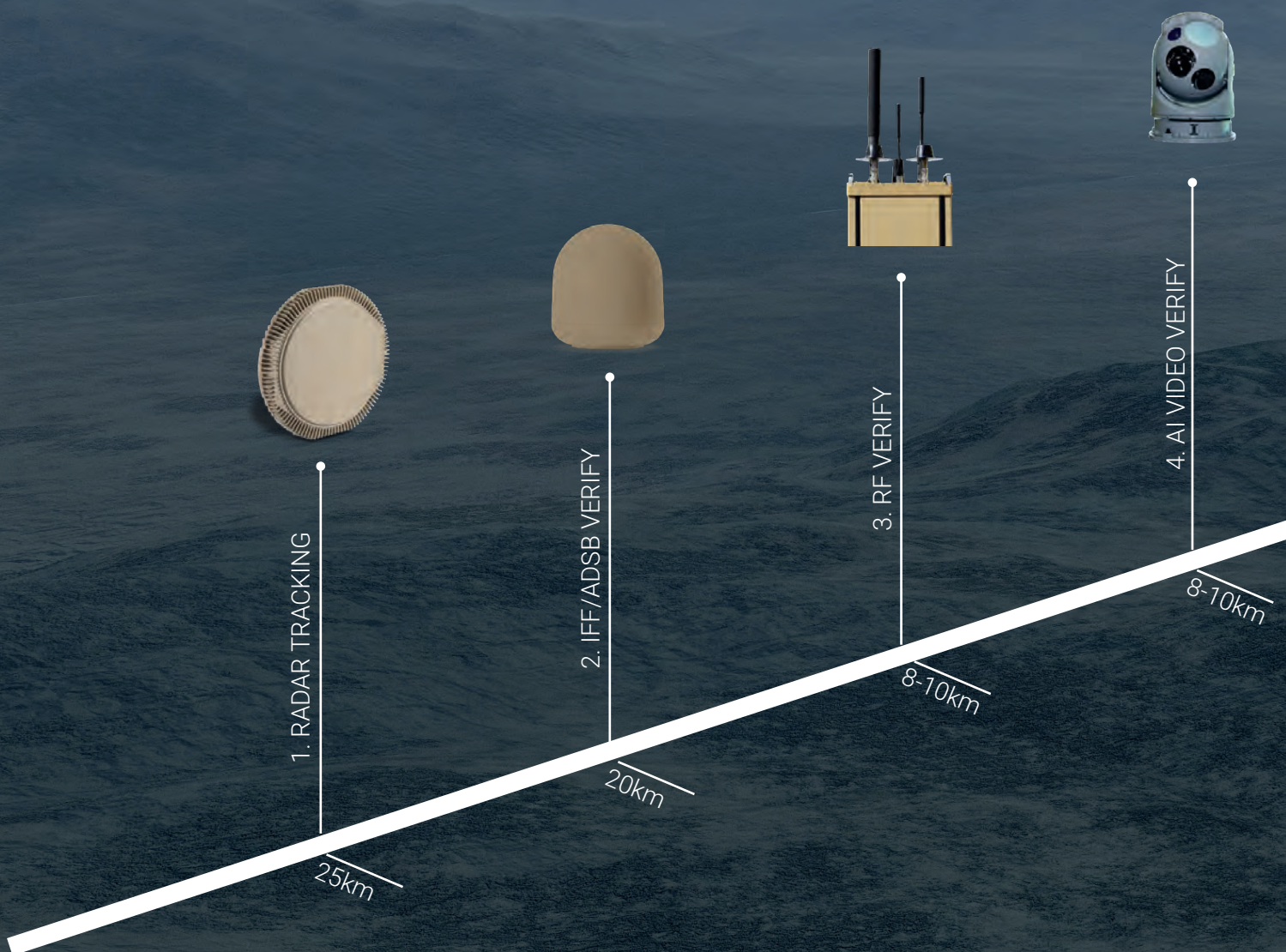
Enables communication centrally with remote and local operators. System available in 2 fully integrated mobile platforms

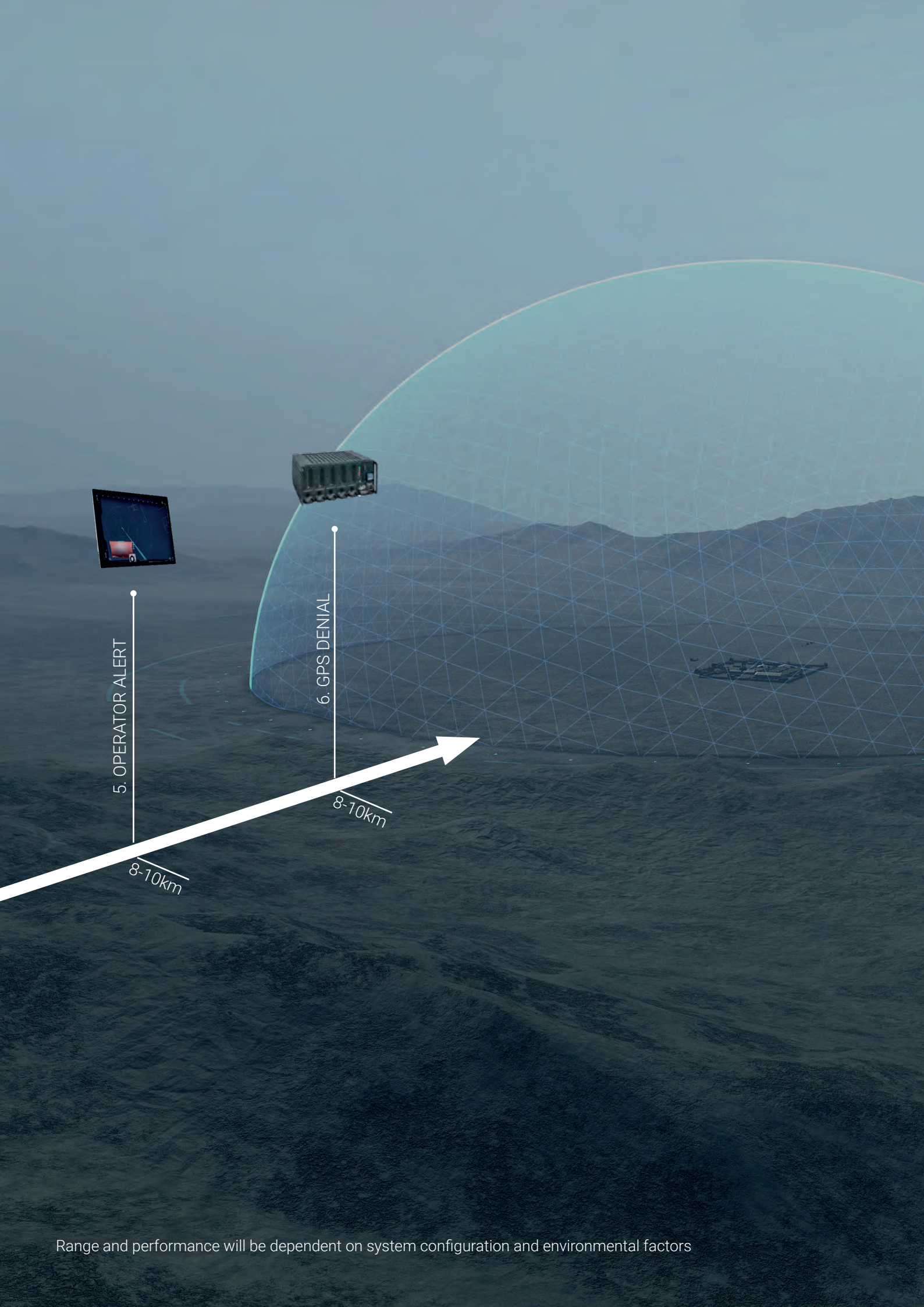
INSTALLATION, INTEGRATION & SUPPORT

All software, sensors and effectors installed and integrated by qualified engineers. Operator familiarization training available

NiDAR™ CUAS LAYERED PROTECTION

NiDAR CUAS provides a full end to end protective chain against UAS, integrating several sensors and effectors, optimizing their interoperability and performance. Beginning with detection, the UAS is discovered, its intent is verified using NiDAR AI and the operator is alerted with decision support on how best to respond with countermeasures. As NiDAR CUAS is sensor agnostic, each component is selected from MARSS qualified supply chain and integrated based on customer requirements.





5. OPERATOR ALERT

6. GPS DENIAL

8-10km

8-10km

Range and performance will be dependent on system configuration and environmental factors

NiDAR CUAS OPERATOR ALERT

A SINGLE, INTUITIVE INTERFACE FOR ALL
MARSS NiDAR APPLICATIONS, SENSORS
AND COUNTERMEASURES

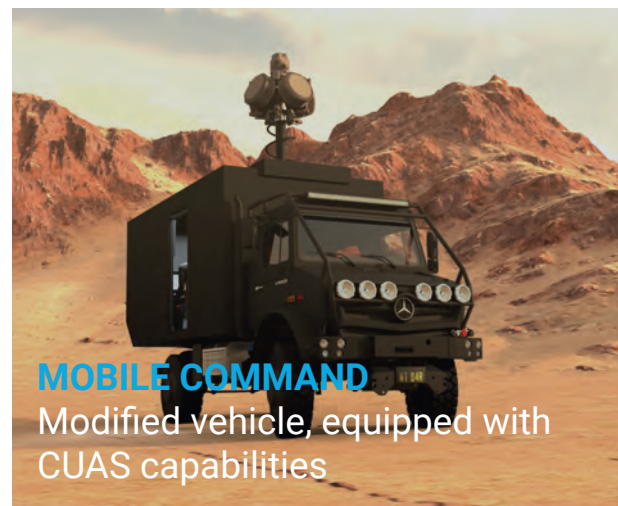
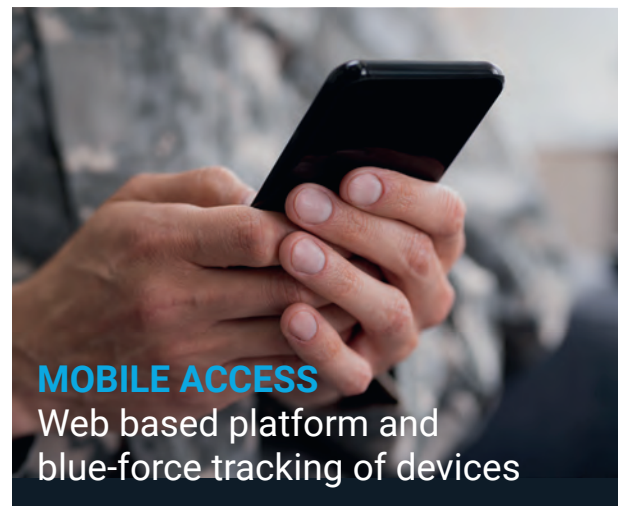
1. **REAL-TIME TRACKING**
1000+ objects, including blue force
2. **LIVE VIDEO FEEDS**
Automated tracking/camera handover
3. **MULTI-TOUCH CONTROL**
Intuitive operation of sensors/effectors
4. **BACKGROUND**
Satellite image and electronic map
5. **SMART ALERTS**
Real time visual/audio alarms
6. **EVENT TIMELINES**
Geo-located/time stamped data
7. **PROTECTION ZONES**
User defined warning and alarm zones
8. **SECURITY LEVELS**
User defined based on threat scenario
9. **OBJECT MONITORING & INTEL**
Critical data on object bearing
10. **COUNTERMEASURE MENU**
Selection based on type of target



NiDAR CUAS CROSS PLATFORM COMMAND

COMPLETE CONTROL IN ANY LOCATION

With complete integration on existing or new platforms, NiDAR is easily accessible through a range of fixed and mobile command centers. This grants operators the full power of NiDAR virtually anywhere.



NiDAR CUAS ASSET INSTALLATION

NiDAR CUAS is a turnkey solution. It is modular, scalable, and fully customizable to any port, base, or vessel. Each configuration, including the number of sensors and effectors, is developed in collaboration with our customers and installed based on their security requirements.



AIR SURVEILLANCE
RADAR



INFRARED OPTICAL
CAMERAS



RF MONITORING
& DETECTION





NI DAR C2
INTERFACE



RF TARGETED &
GPS JAMMER



MOBILE
COMMAND

NiDAR CUAS MOBILE

FEATURES / BENEFITS

Turnkey solution – designed to detect and respond to UAS threats in remote locations

Technical integration – full sensor fusion, harmonized into mobile C2

Flexible design – available in an all-terrain 4x4 or discreet urban vehicles

SYSTEM OVERVIEW

1. Best-in-class detection, including EO/IR camera, air radar and RF detection
2. Long range electronic countermeasures, including RF/GPS jamming
3. Fully customized, configurable multi-utility vehicle
4. Accommodate crew of up to 6, including 4 operators, driver and passenger
5. Fully integrated NiDAR C2



NiDAR CUAS SUPPORT



1. SITE

CLIENT INFRASTRUCTURE ASSESSMENT

- Threat and/or vulnerabilities evaluation
- Optimal location of sensors/effectors
- Network communication requirements



4. TRAINING

OPERATOR AND MAINTAINER TRAINING

- Training needs analysis
- Sensor maintenance training
- NiDAR operator and administrator training



2. DESIGN

SYSTEM DESIGN AND VALIDATION

- Functional and performance requirements
- Hardware and software specifications
- Individual and system level testing



5. OPTIMIZATION

NiDAR SYSTEM OPTIMIZATION

- 14-45 day post install diagnostics
- Modifications based on operator input
- Discussion of potential design expansion



3. INSTALLATION

MARSS ON-SITE COMMISSIONING

- Setup and calibration of all systems
- Full sensor configuration
- Functional verification tests



6. MAINTENANCE

SUPPORT AND MAINTENANCE SERVICES

- Regular health-check visits
- Software updates, and enhancements
- Full turnkey warranty and repair services





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