ZOID

ROMD

RE-USABLE OFF-BOARD MISSILE DECOY FOR RADAR GUIDED ANTI-SHIP MISSILE DEFENCE

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MISSILE DECOY

RE-USABLE ACTIVE RADAR DECOY

Modern **Anti-Ship Missiles** pose a significant threat to Naval Platforms. The missiles fly at super-sonic speeds, at a sea-skimming trajectory, guided by terminal **active radar seekers.** Soft-kill measures are an effective counter for such threats (10-25 seconds engagement time in terminal phase).

ROMD system is equipped with a [redacted] **based RF decoy** mounted on a **multi-rotor drone**. The ROMD Drone is able to quickly position itself away from the ship and emit an emulated RF signal **impersonating the RCS of ship.** The ASM is seduced by decoy signals and **misses the true target.**

Equipped with state-of-the-art electronics**; GaN Power Amplifier, Wide-Band Superheterodyne Receiver, and Phased Antenna with Beam Steering;** enabling High RCS Reproduction with a low burn-through range suitable for large Indian Ships.

Counter Multiple Types Of Missiles

Beats advanced ECCM of modern Radar Seekers

High RCS Reproduction

20,000 sqm RCS to emulate ships

GaN Amplifier

High-power RF Tx

Broadband Coverage

Frequency C, X, Ku, K & Ka Bands

Key Features

RAPID REACTION & HIGH AGILITY

Tethered drone for rapid launch and high T/W design for high-speed positioning and seduction

PLATFORM AGNOSTIC DEPLOYMENT

End-to-end operations without dedicated explosive launchers. Compatible with carriers, destroyers, frigates, and patrol vessels.

REUSABLE AND COST-EFFICIENT

Reusable UAV returns safely post-engagement. Eliminates recurring expenditure while sustaining high mission-readiness.

ACTIVE RF MISSILE DECOY PAYLOAD

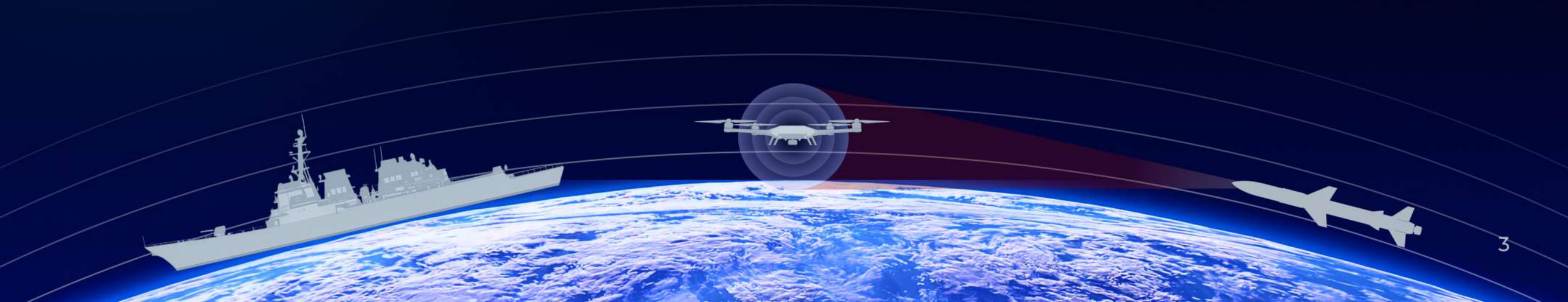
Receives, processes & transmits RF emissions to create a false RCS, seducing the radar seeker head of anti-ship cruise missiles

ADVANCED PHASED ARRAY ANTENNA

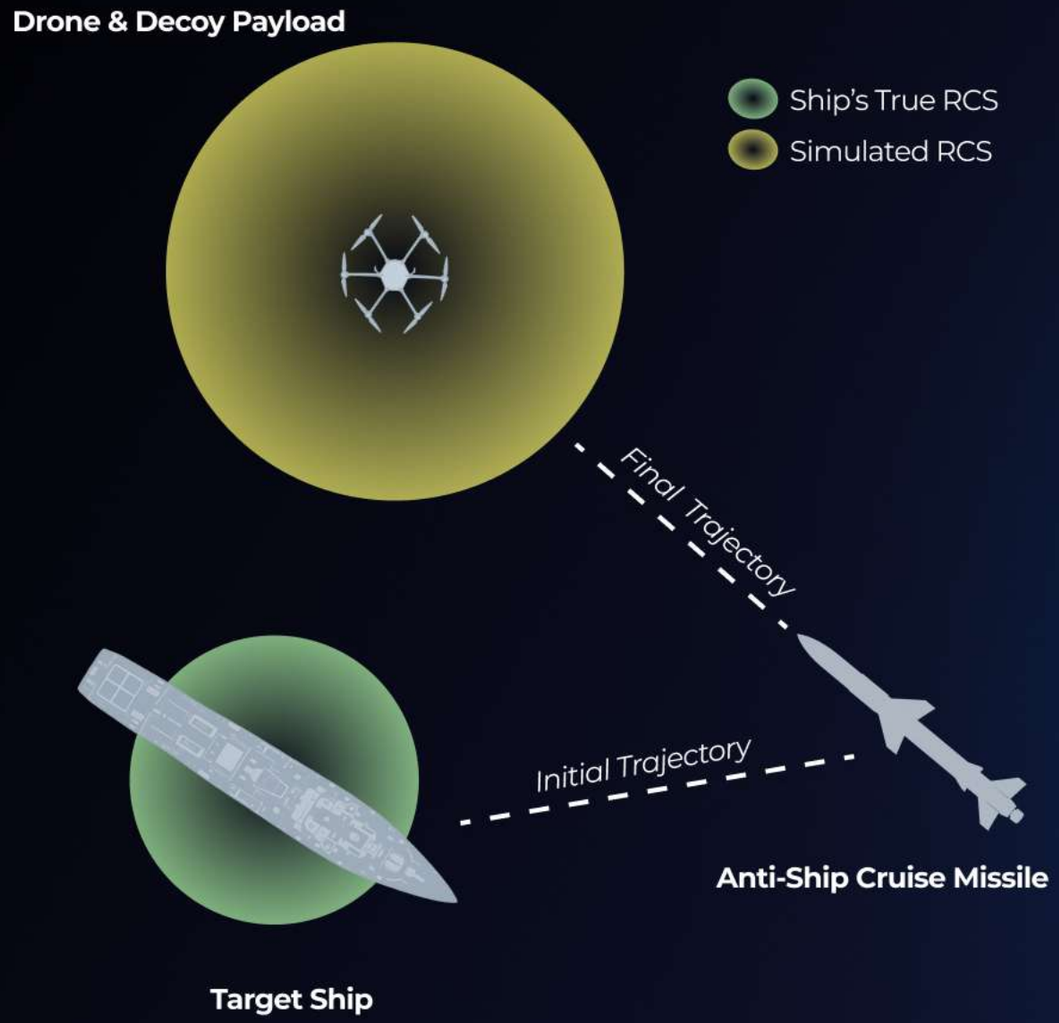
Antenna array capable of high-power handling and **electronic beam-steering** to ensure generation of a credible false target.

EFFECTIVE AGAINST VARIETY OF SEEKERS

Broadband seeker coverage C, X, Ku, K & Ka Bands while maintaining constant system gain throughout the frequency range.



ROMD - CONCEPT OF OPERATIONS



1. THREAT INITIATION

Anti-ship missile (ASM) is launched from aircraft, surface combatant, or shore-based battery, guided towards the target vessel **by external sensors.**

2. TERMINAL HOMING

The onboard RF seeker activates & begins precision homing towards the vessel. Typical distance of terminal phase is [redacted] km, giving a reaction time of [redacted] **secs to the defending vessel.**

3. THREAT DETECTION & MISSILE DEFENSE SEQUENCE

The defending vessel's **ESM** detects RF emissions of the seeker & the **Combat Management System (CMS)** initiates the Missile Defense Sequence, consisting of a layered hard-kill and soft-kill response.

4. SOFT-KILL SUITE - ROMD ACTIVATION

The CMS activates the ROMD system & transmits threat engagement parameters. The carrier UAV executes **rapid launch in <5 secs** & follows an AI generated **trajectory** to achieve **optimal decoy geometry.**

5. ACTIVE RF SEDUCTION OF ASM

The **DRFM payload** transmits coherent RF emissions, **actively beam steered** towards the incoming threat. The Missile seeker acquires **the much larger emulated RCS** & diverts away from the vessel.

6. BURN-THROUGH RANGE & RECOVERY

As the ASM approaches, the **range-gate of the seeker** shifts towards the ROMD payload. As the ASM enters the burn-through region, the defending vessel is already at a safe miss-distance. The ASM passes under the ROMD system and the UAV autonomously lands back on the vessel.

ROMD PAYLOAD - SPECIFICATIONS

PARAMETER	SPECIFICATIONS	PARAMETER	SPECIFICATIONS
Frequency Range	C, X, Ku, K & Ka Bands	Antenna Configuration	Phased Array Antenna
Instantaneous Band Width	REDACTED	Antenna Gain	REDACTED
Payload Sensitivity	REDACTED	Antenna Polarization	REDACTED
Decoy Processor Gain	REDACTED	Power Handling	REDACTED
Decoy Antenna Coverage	360 degree	Burn-through Range	REDACTED
Sampling	REDACTED	External Reference Input	REDACTED
Transmit Delay	REDACTED	Linked Interface	Ship's Combat Management & EW System
Operating Temperature	-10 to 65° C	Dimensions	REDACTED
Weight	<5 Kg	Power Consumption	<200W

* The detailed specifications and engagement envelopes are **CLASSIFIED** in accordance with **OPSEC Regulations**. Disclosure is available only upon authorized request and a duly signed NDA.

ROMD CARRIER - TETHERED UAV

LONG DUTY-CYCLE HIGH-SPEED TETHERED DRONE FOR NAVAL VESSELS

Active decoy is deployed on a high-speed tethered UAV engineered for continuous maritime operations. An extremely high **T/W ratio** ensures stable station-keeping alongside moving naval vessels, even in turbulent **sea state level 4**. The surplus thrust margin enables **rapid maneuvering** and precise repositioning for the **time-critical mission.**

Parameter	Specification
Configuration	Rotary-wing Tethered Quad-Copter
Endurance	• 24 hour continuous tethered flight • 30 mins flight-time after detaching tether mid-flight
MTOW	30 Kg (Including Decoy Payload < 5 Kg)
Tether Length	100m From Launch Station
Input Power At Ground	8Kw For Tethered Station-Keeping @ 30kts
Reaction Time	<5 seconds after takeoff command <1 seconds if already in tethered flight
Speed	Maximum 30 m/s Cruise 15 m/s
T/W Ratio	3:1 (At Sea Level)
Deployment Envelope	• Sea State Level 4 • True Wind Resistance <30kts
RF Emission Control	• Shielded Power Electronics (High-Voltage Tether & DC Converters) • BLDC RF Emissions Controlled & Isolated

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