RTsys

Underwater Acoustics & Drones

SEMA

PORTABLE & RECOVERABLE TARGET FOR ASW TRAINING

May 24 - 2023

How to allow easy and high ends ASW training without mobilizing some of Navy's most valuable assets ?

Need for ASW training solution to replace the Submarine during **ASW Training**

Navies requirements to replace old technologies:

1 – Easy To Use
2 – Easy to Recover
3 – Train Realistically
4 – Intrinsically Safe
5 – Easy to Maintain

"The target must be affordable, portable, reusable and shall give a realistic acoustic response within their peripheral frameworks"

ASW UNITS NEEDS TO MAINTAIN

Basic Training

A single unit for operator training in elementary anti submarine tasks for :

- Surface Unit, MPA,HELO or SUB :
  - Active mode: detection, tracking, classification, internal procedures
  - Passive mode: detection, tracking, classification, TMA (Target Motion Analysis)
  - Use of weapons: Torpedo firing exercise

ASW UNITS NEEDS TO MAINTAIN

Advanced Training

- Training in cooperation with several ASW assets

  - Application of procedures
  - Naval force management / Coordination of assets
  - WSM (Water Space Management) / PMI (Prevention of Mutual Interference)
  - Safety rules in exercise
  - Anti torpedo reaction

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AS USED BY FRENCH ARMED FORCES

CHARACTERISTICS

- Lenght: L 213 cm
- Weight: 33 kg
- Operating depth: 300 m
- Speed: 15 knots
- Autonomy: 20 hours at 4 knots (1.5 hour at 15 knots)

ACOUSTIC FEATURES

- Echo-repeater (1 to 33 kHz)
- Noise maker: 200 Hz to 38 kHz
- 2 broadband: 450 Hz to 8 kHz and 10 to 23 kHz
- 6 narrowband: 200 Hz to 38 kHz

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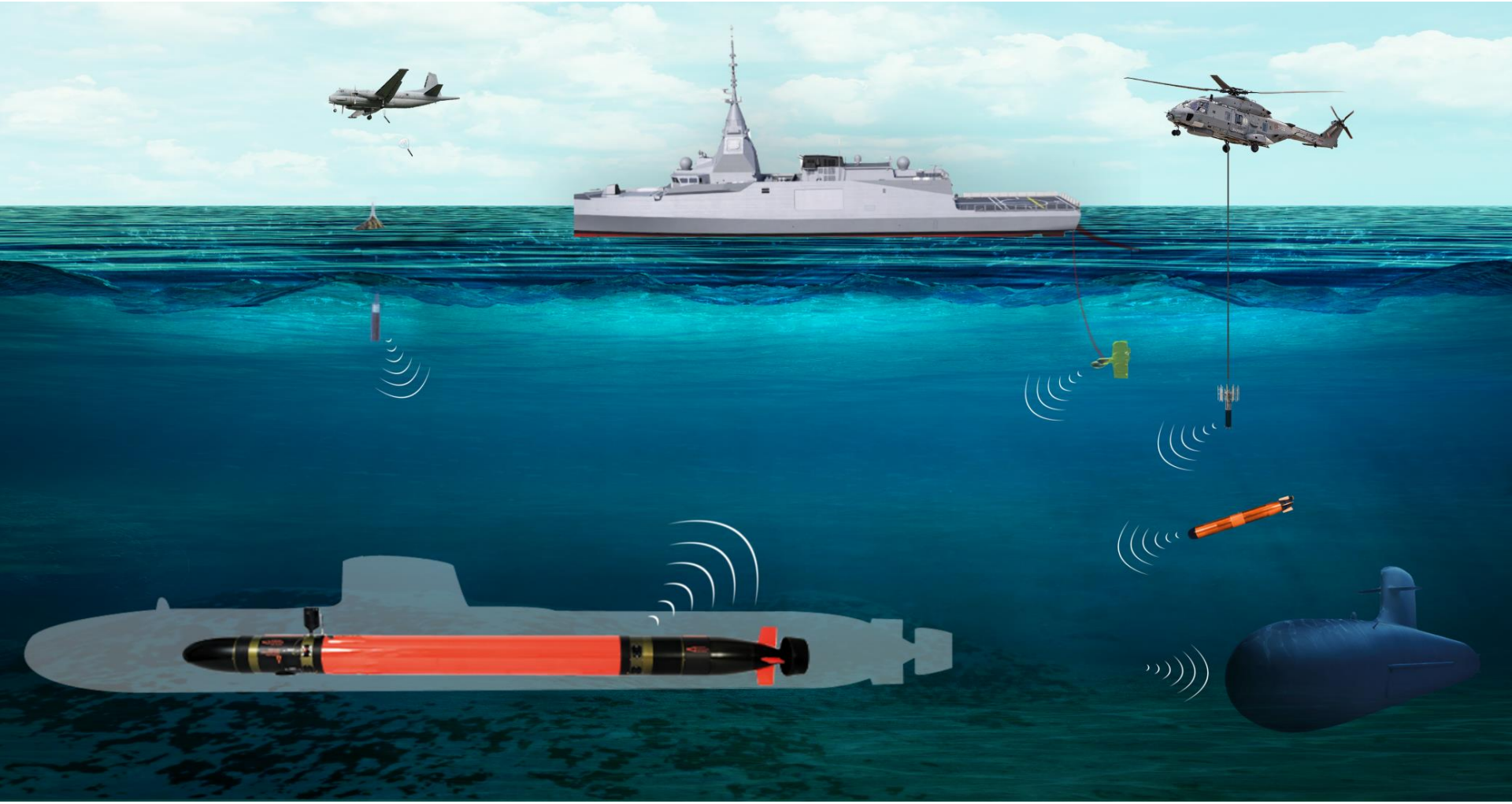

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Operator training (detect, classify, prosecute)

Elementary or higher training of ASW units in passive and/or active mode

Torpedo Firing exercise

2 Men Portable

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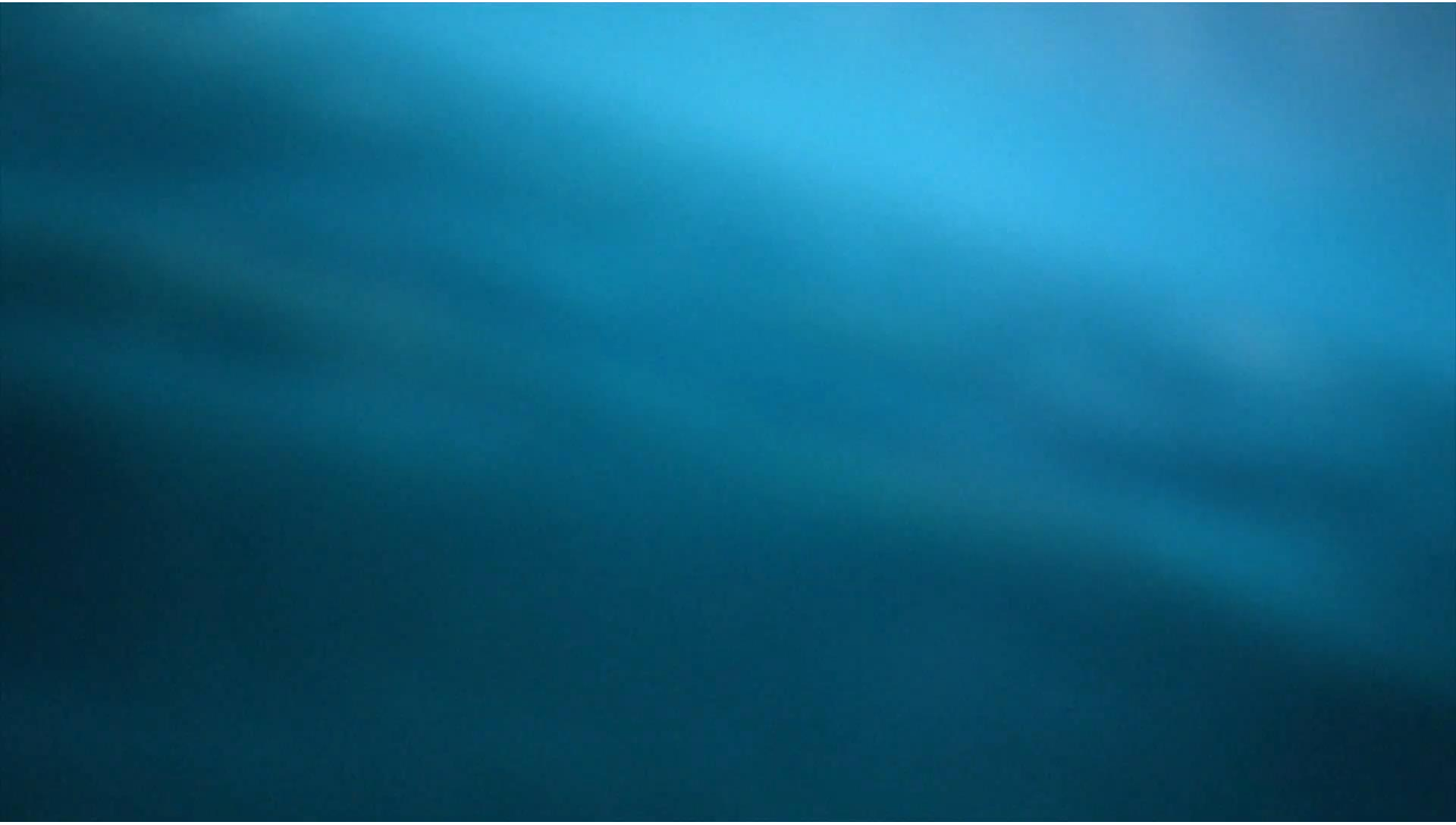
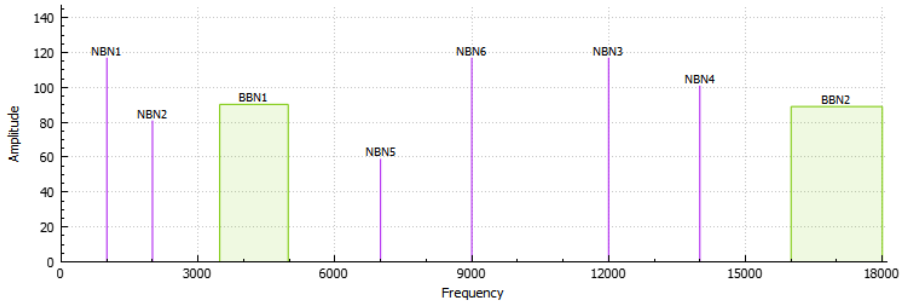


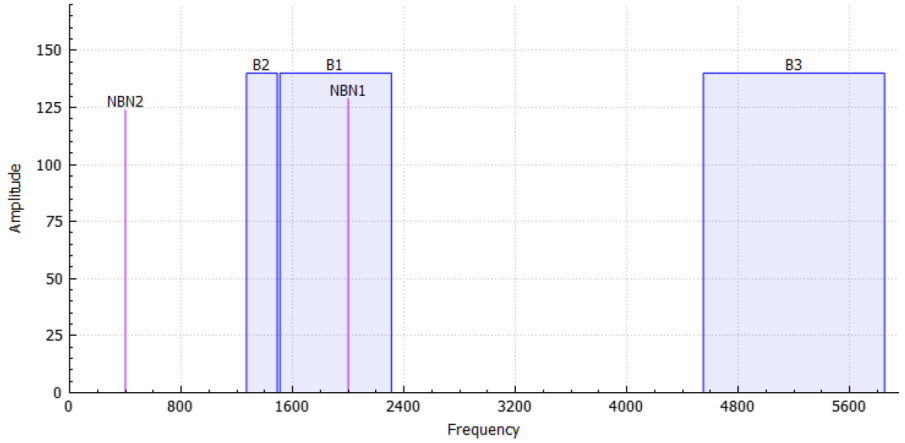
SEMA target aims at:

- **Passive Sonar** implementation training
- **Active Sonar** implementation training
- **Torpedo** implementation training



Operational functionalities implemented:

- Noisemakers simulation (**6NBN, 2BBN**)
- **Active Sonar** or **Torpedo repeater**
- Distant **STOP**
- Signals and **remote** actions



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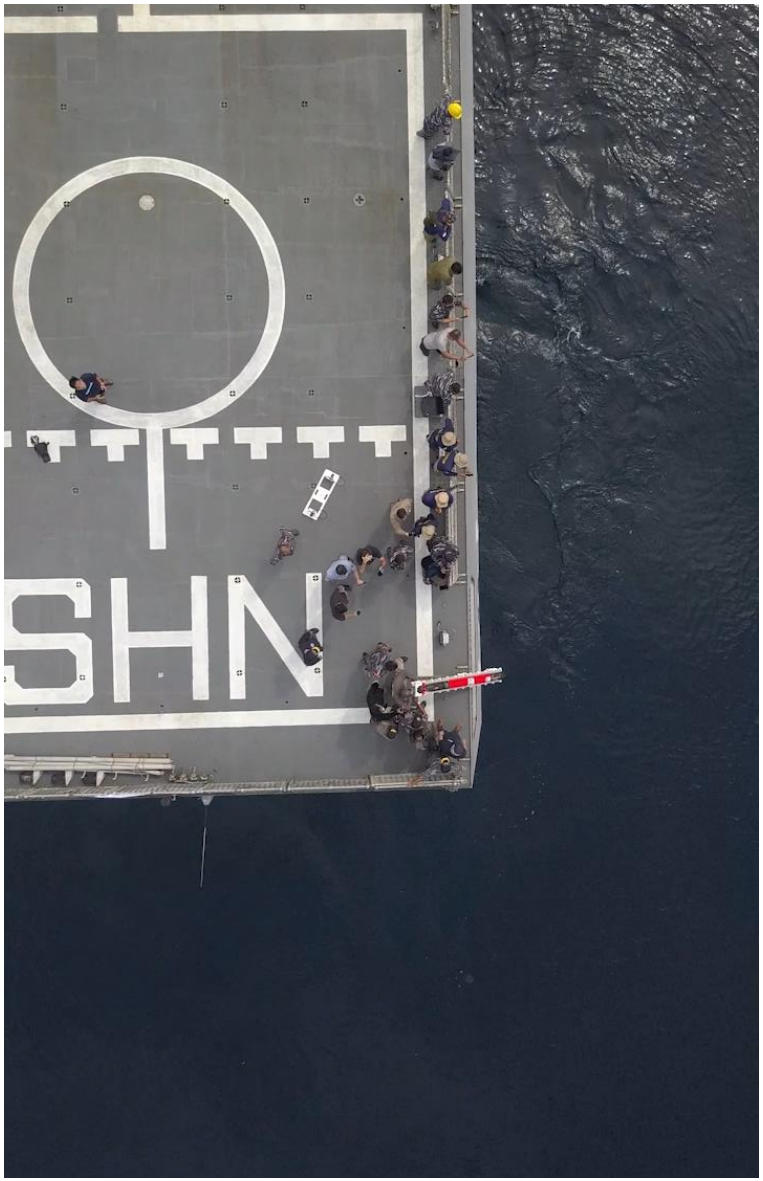
SEMA target aims at:

During a mission

- A different acoustic payload can be assigned to each mission tracks (**segment** or **waypoint**)
- Easy to **launch and recover**
- **Easy to program**

General Overview

- **Controlled cost**
- Unique **NSN: NATO Stock Number**



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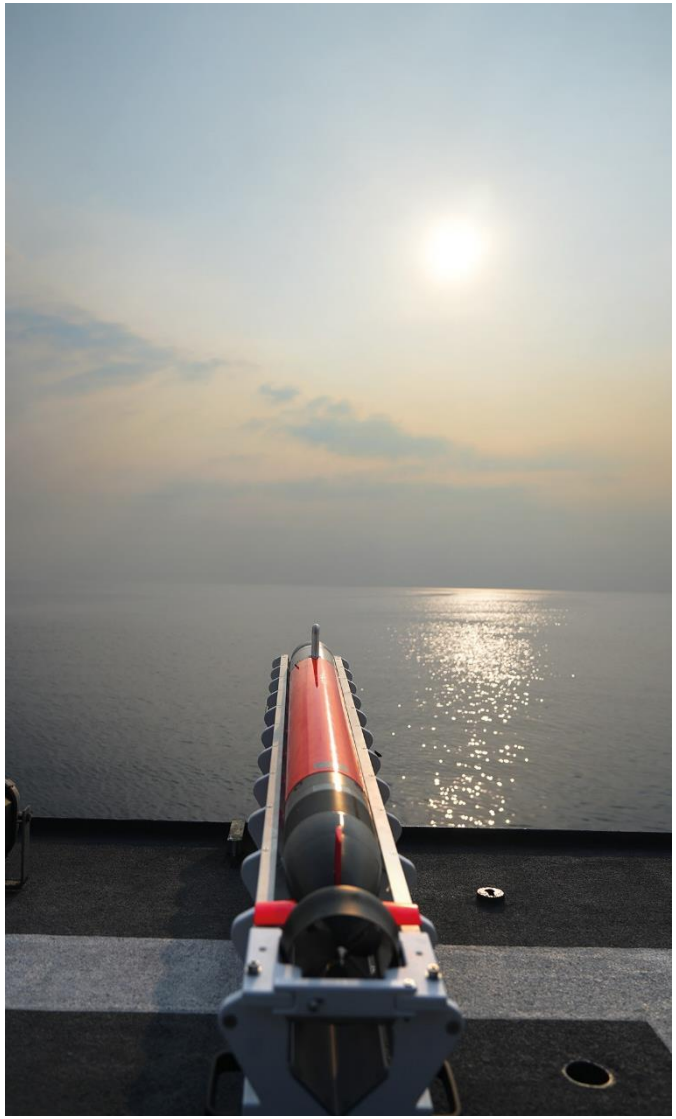
SEMA CAPABILITIES TO REPLACE THE SUBMARINE FOR THE TRAINING OF:

FRIGATES / CORVETTES
- Variable Depth Low Frequency active sonar
- Hull mounted Sonar / Bow mounted sonar

ASW HELICOPTERS
- Low frequency active dipping sonar
- Active/passive Sonobuoys

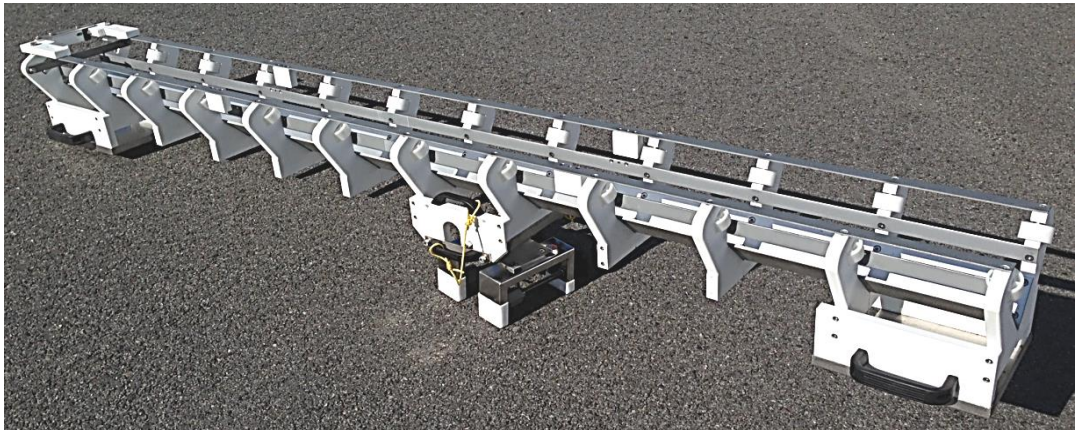
MARITIME PATROL AIRCRAFTS
- Active/passive Sonobuoys

TORPEDOES
- Latest generation light & heavy weight torpedo **(MU-90, A244-S, Mark54, F21,…)**



Accessories Case

Laptop Case



Launching ramp

Spare Battery Case

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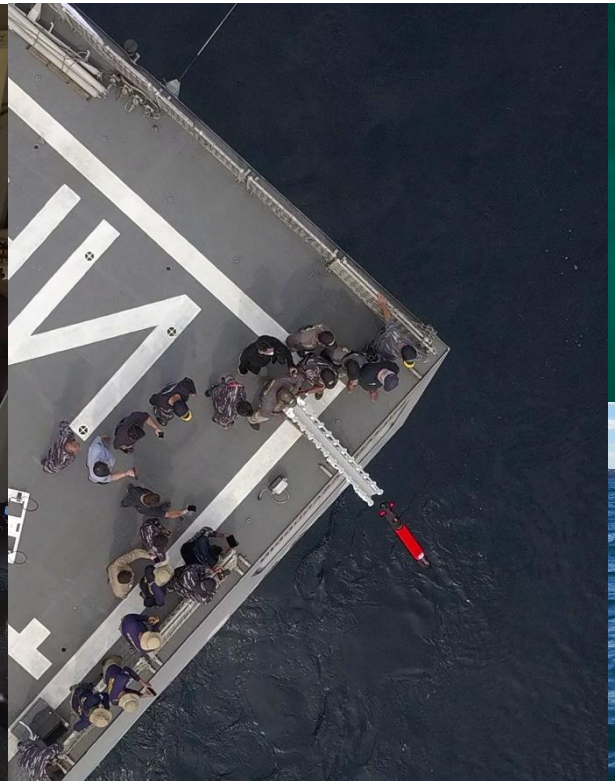

Advantages

- Modern sonar & torpedo compatibility (LFAS, VDS, HMS, ADS)
- Real fight training scenario
- Easy to deploy, recover and maintain
- Reconfigurable in 1 h

SEMA COMPARED TO OTHER TARGETS

Kinematic capabilities

Maximum speed of 15 kt – Allow a realistic behaviour of SSK.
Autonomy 20 hours

Acoustic capabilities

Responds to new generation sonar (low frequency – long pulse up to 16s)
Audio files player (UWT codes or signature)
Relevant homing sonar torpedo response

Recoverable target

Mission report: debriefing enabling full analysis of every exercise
Acoustic record: audio analysis – Intelligence – Sonar performance checks

Acoustic Comms / Remote control

Acoustic and Kinematic changes even during mission
Stop or scuttling orders capabilities

Permanent evolution

Current upgrades: MAD, Radar reflector, Heli-winching

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