

# Genetic Transformation of the Portuguese Navy Fleet

Combined Naval Event 2024

Farnborough, 22nd May 2024





# GENETIC TRANSFORMATION OF THE PORTUGUESE NAVY FLEET

## MAIN TOPICS

**PORTUGUESE NAVY FLEET TRANSFORMATION 1**

**FLEET TRANSFORMATIONAL VECTORS 2**

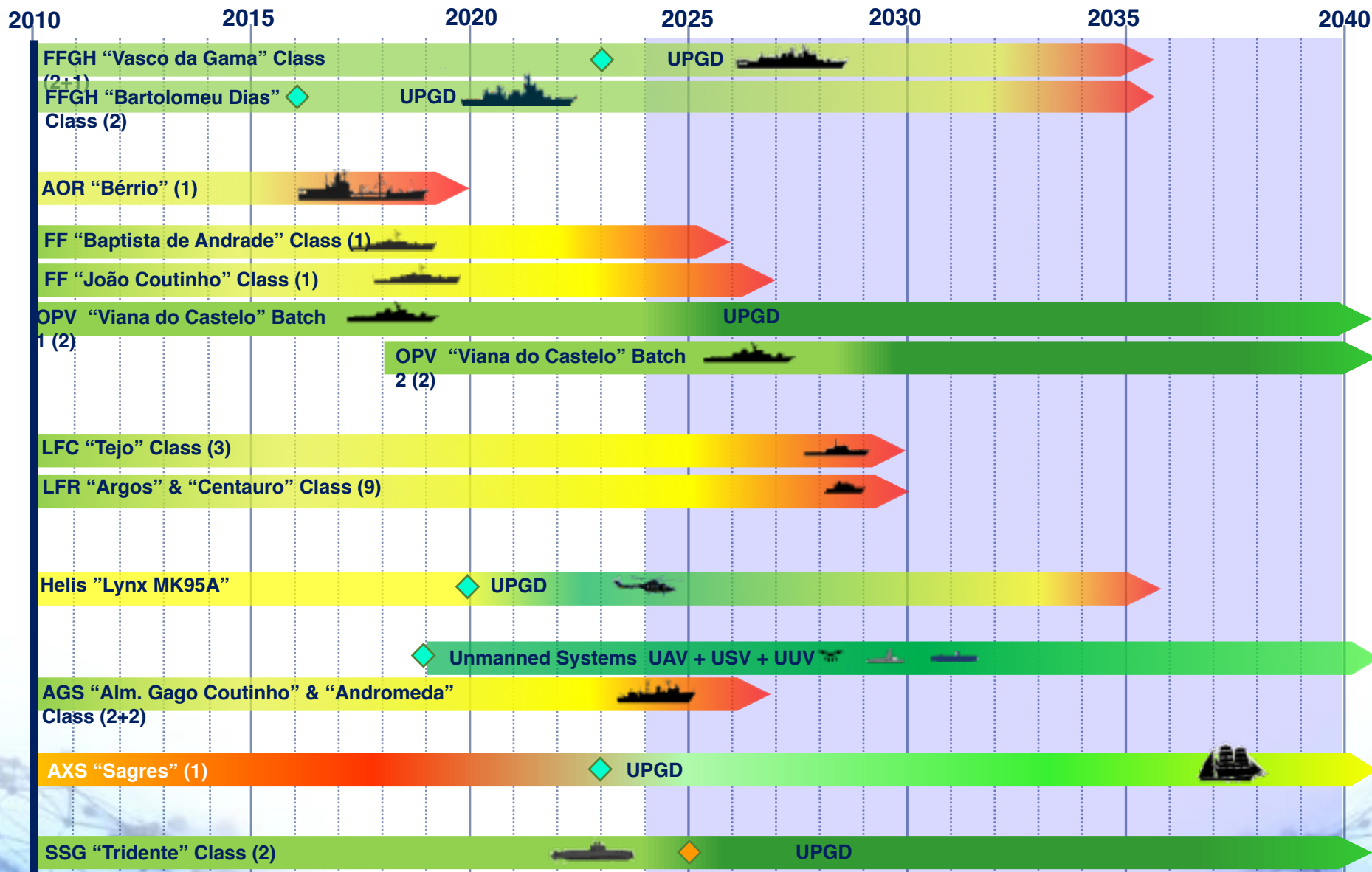
**NEXT GENERATION FRIGATES 3**



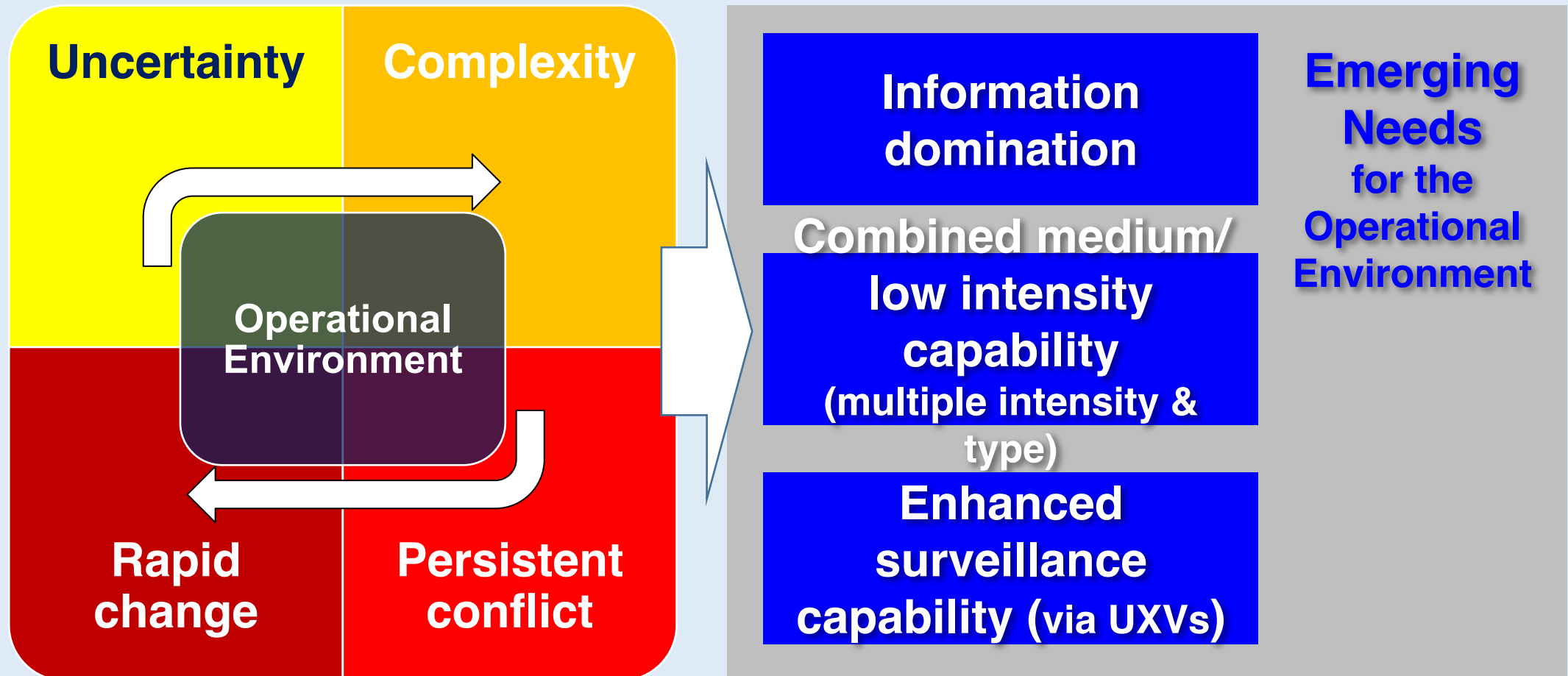


# PORTUGUESE NAVY FLEET TRANSFORMATION

## FLEET TIMELINE



### Operational environment Threats & emerging Needs



## Strategic objectives shaping **FLEET** requirements

**System  
Commonality**

**Fleet  
Integration**

**High  
Availability**

**Efficient  
Sustainability**

**Interoperability**  
(Assets integration  
& expansion)

**Enhanced C4I**  
(Big data)

**AI-based  
systems**  
(Augmented  
operations  
support)

**UXVs**  
(Capabilities  
extension &  
actuators)



# GENETIC TRANSFORMATION OF THE PORTUGUESE NAVY FLEET

## MAIN TOPICS

PORTUGUESE NAVY FLEET TRANSFORMATION **1**

**FLEET TRANSFORMATIONAL VECTORS** **2**

NEXT GENERATION FRIGATES **3**





# PORTUGUESE NAVY FLEET TRANSFORMATION

## TRANSFORMATIONAL VECTORS

2010

2015

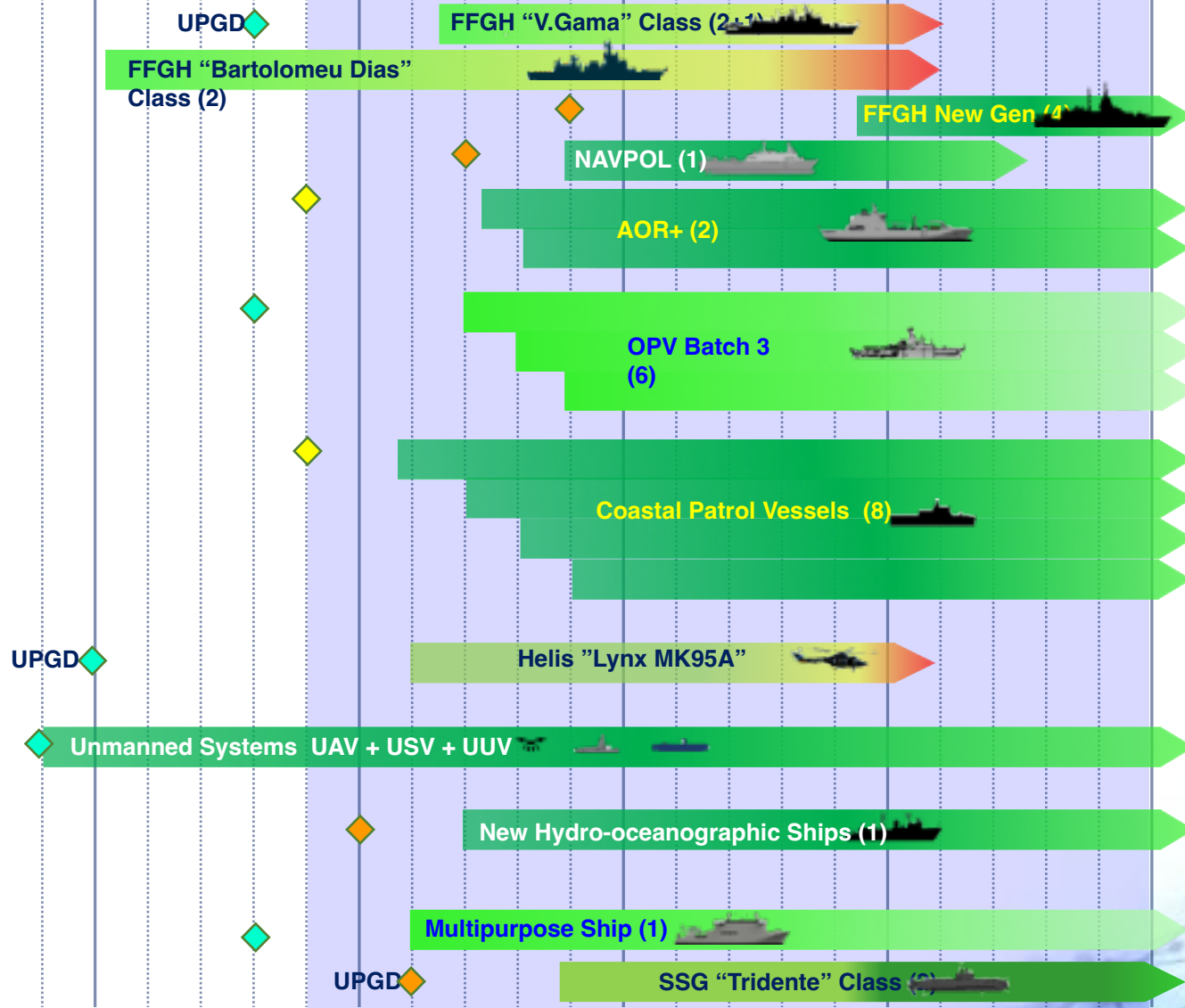
2020

2025

2030

2035

2040









### Dimensions

**Displacement** : 1868 ton  
**Length** : 83,1 m  
**Beam** : 12,95 m  
**Draft** : < 4,5 m



### Environment

**Engines** : TIER III  
**Propulsion** : Electrical/Azimuth  
**Oily water** : Separator  
**Blackwater** : Sewage  
**Solid Residues** : Processed



### Personnel

**Crew** : 45 pax  
**Other** : 22 pax  
**UXV Oper.** : 8 pax  
**Temporary** : more 45 pax  
**Emergency** : more 60 pax



### Operacional

**Availability** : 250 Days  
**Area Op.** : Lat 47N/24S(No ICE)  
**Endurance** : 15 Days  
**Max. speed** : > 20 kts  
**Cruise Speed** : 15 kts





# FLEET TRANSFORMATIONAL VECTORS

## OPV 3<sup>RD</sup> BATCH: CAPABILITIES EVOLUTION



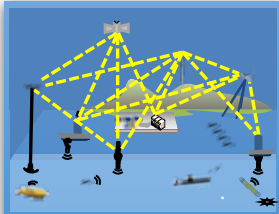
Anti-Mine Warfare



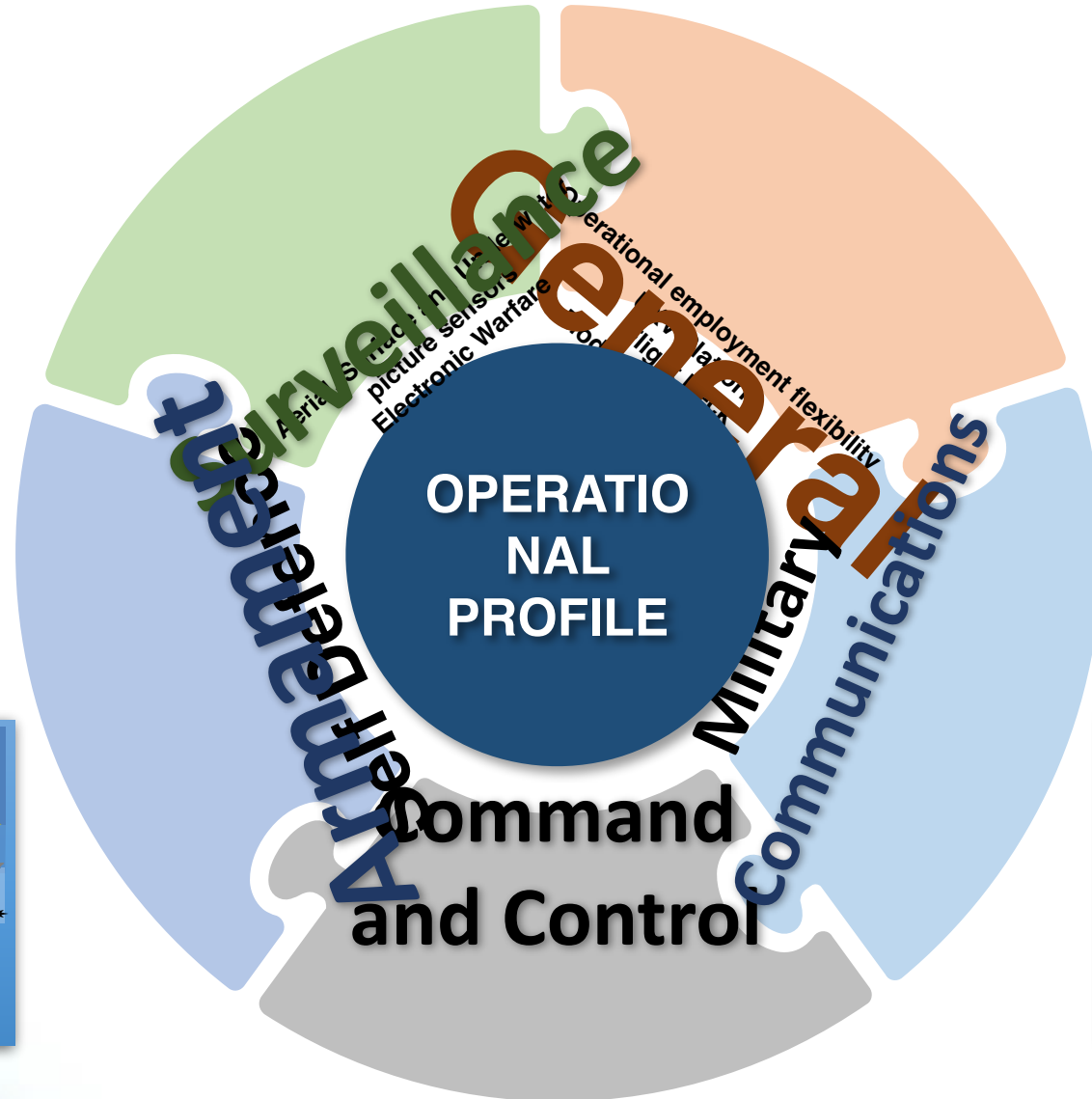
Mine Launching



ASW



Unmanned Vehicles



Pollution Control



Special Operations



Naval Operations



Force Projection



# FLEET TRANSFORMATIONAL VECTORS

## OPV 3<sup>RD</sup> BATCH: SURVEILLANCE & WEAPONS



**WEAPONS**  
30mm RWS  
w/EOS Director



**SENSORS**  
2 Navigation Radars  
Combined Warning Radar  
*IFF & ADS-B*  
*Tactical Data Link*  
*Military SATCOM*  
EW/ESM  
EOS



**FLIGHT DECK**  
Super Lynx &  
Augusta Westland AW159

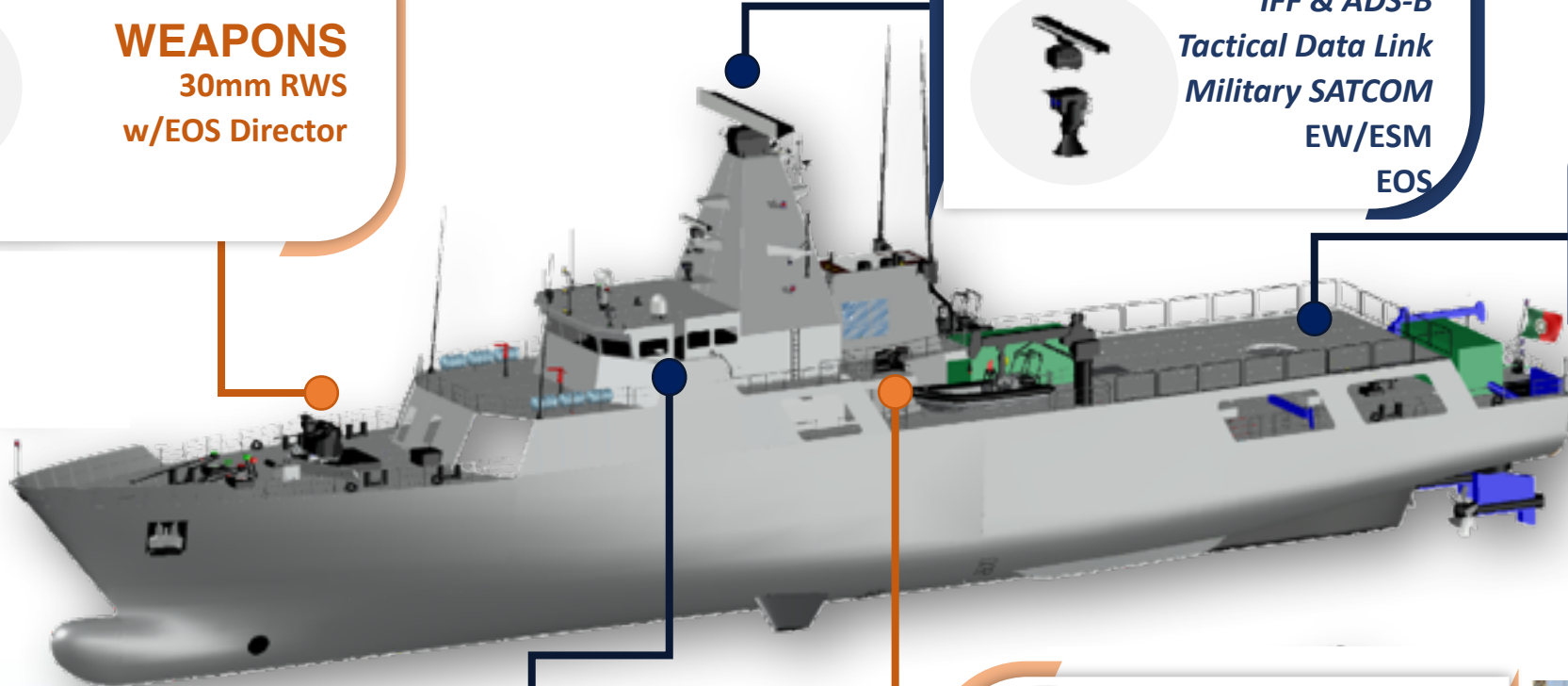


**ATAS**  
Containerised

**BRIDGE**  
Integrated Bridge System  
Integrated Platform Management System



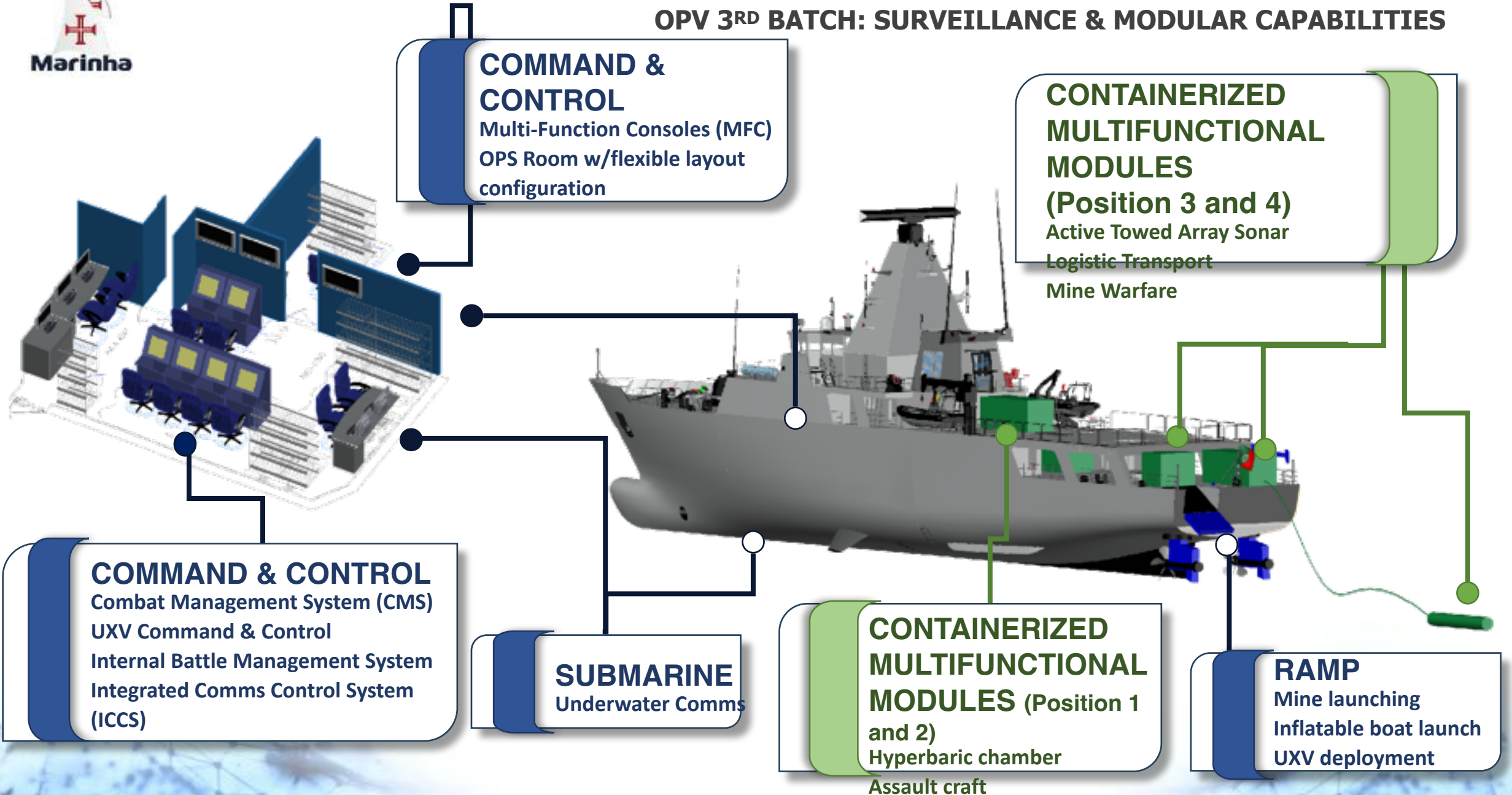
**WEAPONS**  
2x 12.7mm RWS w/  
*EOS Director*





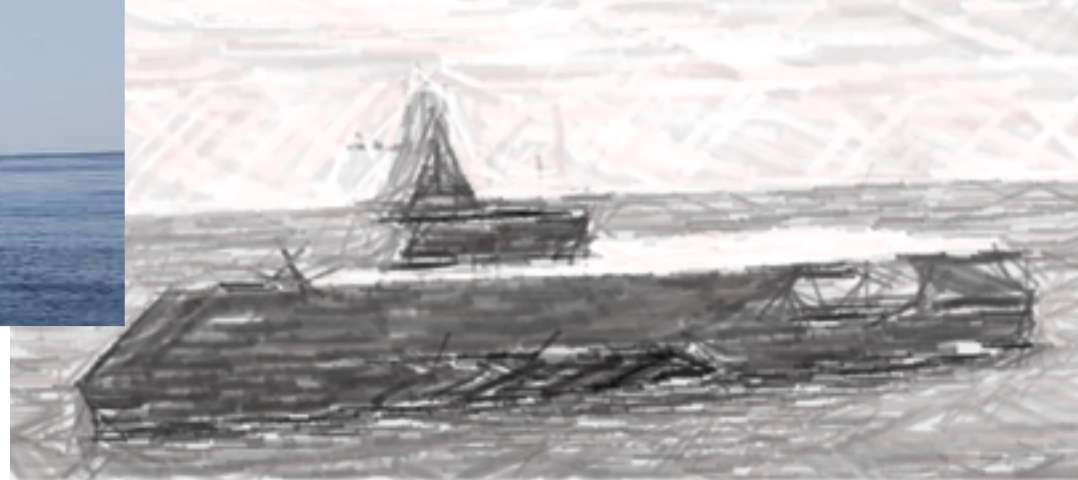
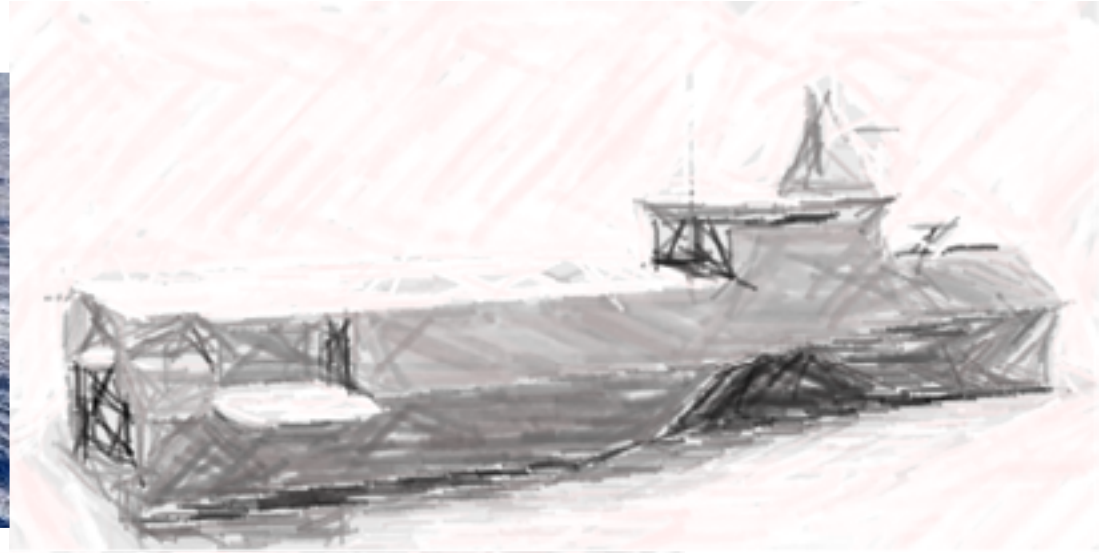
# FLEET TRANSFORMATIONAL VECTORS

## OPV 3<sup>RD</sup> BATCH: SURVEILLANCE & MODULAR CAPABILITIES





## FLEET TRANSFORMATIONAL VECTORS



# Coastal Patrol Vessels



### Dimensions

**Displacement** : 370 ton  
**Length** : 44,5 m  
**Length side hulls** : 19,6 m  
**Beam max** : 13,8 m  
**Draft** : 2,5 m



### Environment



**Engines** : TIER III ready  
**Propulsion** : Electric + Diesel  
**Oily water** : Separator  
**Blackwater**: Sewage  
**Solid Residues** : Processed

### Personnel

**Crew** : 13 pax  
**Extra crew** : 16 pax  
**Temporary** : more 35 pax



### Operational

**Availability** : 300 Days  
**Area Op.** : up to 50 nm  
(Portugal + Madeira/Africa)  
**Endurance** : 7 Days  
**Max. speed** : 18 kts  
**Cruise speed**: 10 kts



Multitasking and multimission  
**Coastal Patrol Vessel** with:

- deployment and recovery capability for RHIB and USV up to 13 metres long, and;
- multiple domain UXV operation.

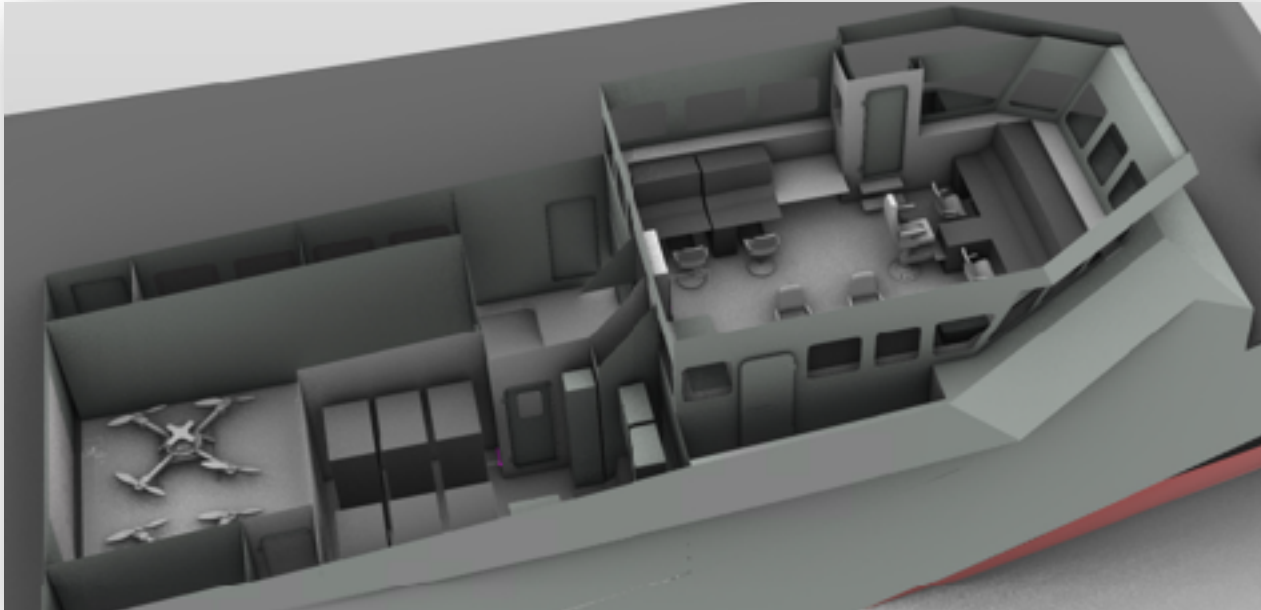
Takeoff / Landing runway with approx. 25 metres long for UAV



## FLEET TRANSFORMATIONAL VECTORS

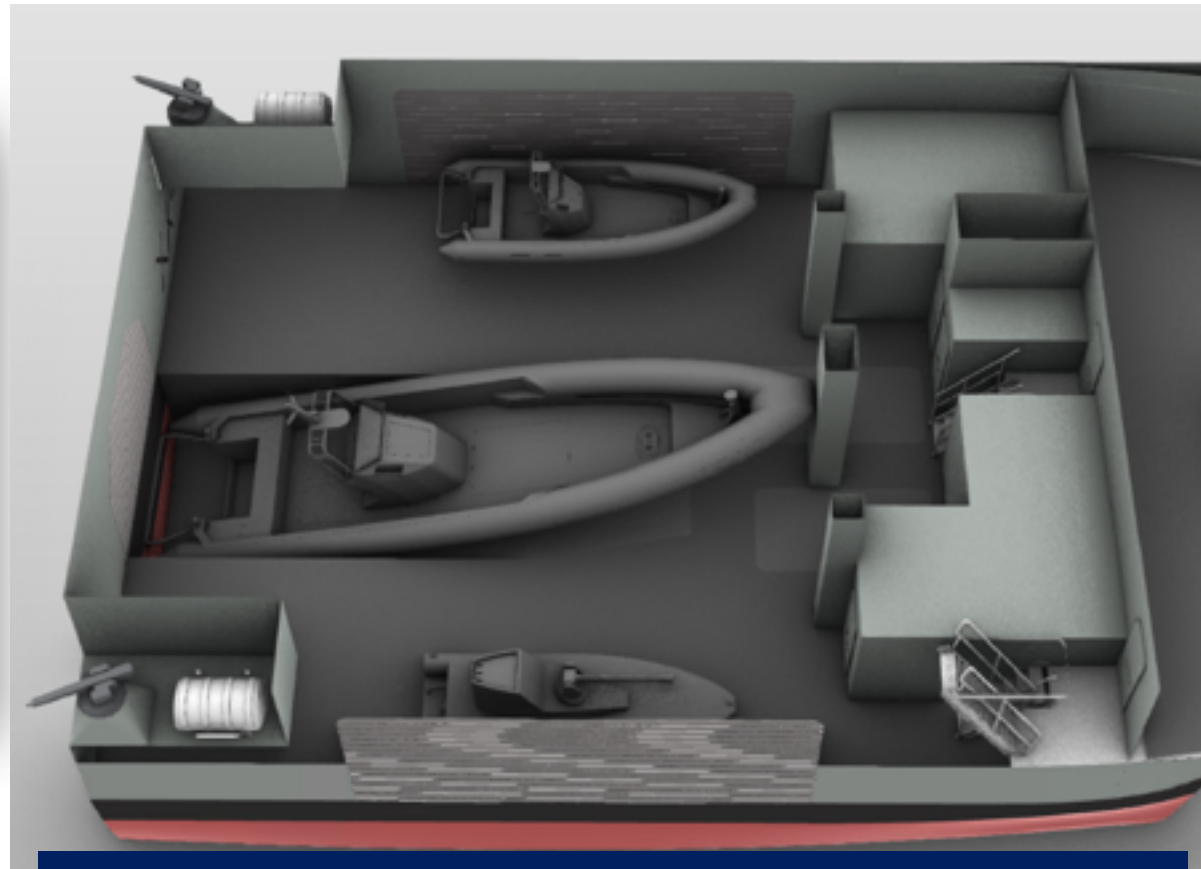
### COASTAL PATROL VESSELS: CONCEPT FEATURES

360° vision Integrated bridge



Hangar for UXV

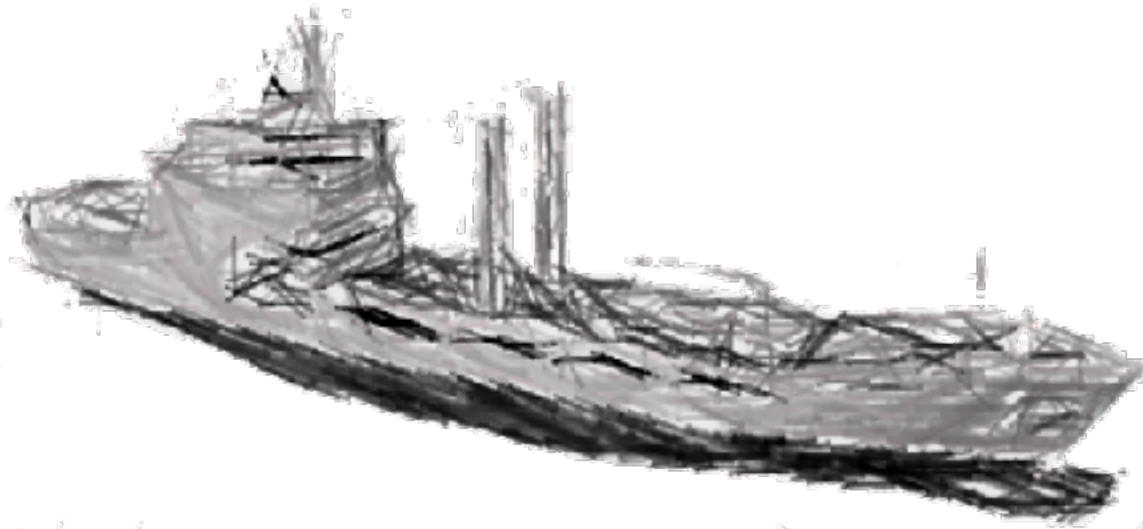
**Electric propulsion up to 12+ knots, and Diesel for top speed**



Fast deployment and projection of:

- one 13 metre-long RHIB (up 60 kts), and;
- two 7 metre-long RHIB / USV (40+ kts).





**AOR+**  
**(Fleet Replenisher w/  
enhanced  
logistic capabilities)**



### Dimensions

**Displacement** : 7000+ ton  
**Length** : <140 m  
**Beam** : <20 m  
**Draft** : <7,5 m



### Environment



**Engines** : TIER III ready  
**Propulsion** : Electric/Diesel  
**Oily waters**: Separator  
**Blackwater**: Sewage  
**Solid Residues** : Processed

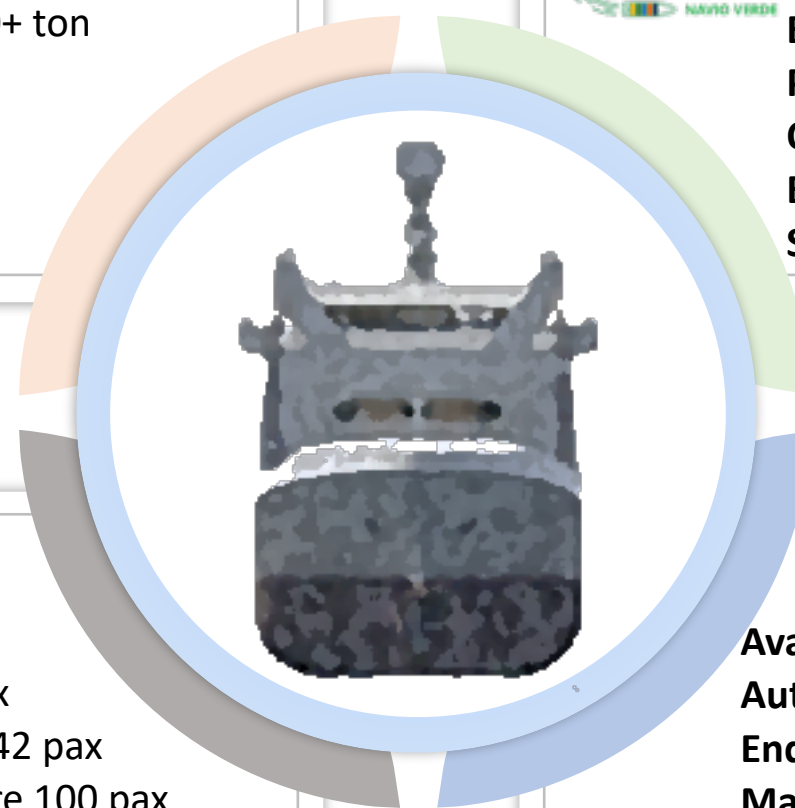
### Personnel

**Crew** : 50 pax  
**Overflow** : 42 pax  
**UXV operators** : 42 pax  
**Temporary** : more 100 pax  
**Emergencies** : more 200 pax

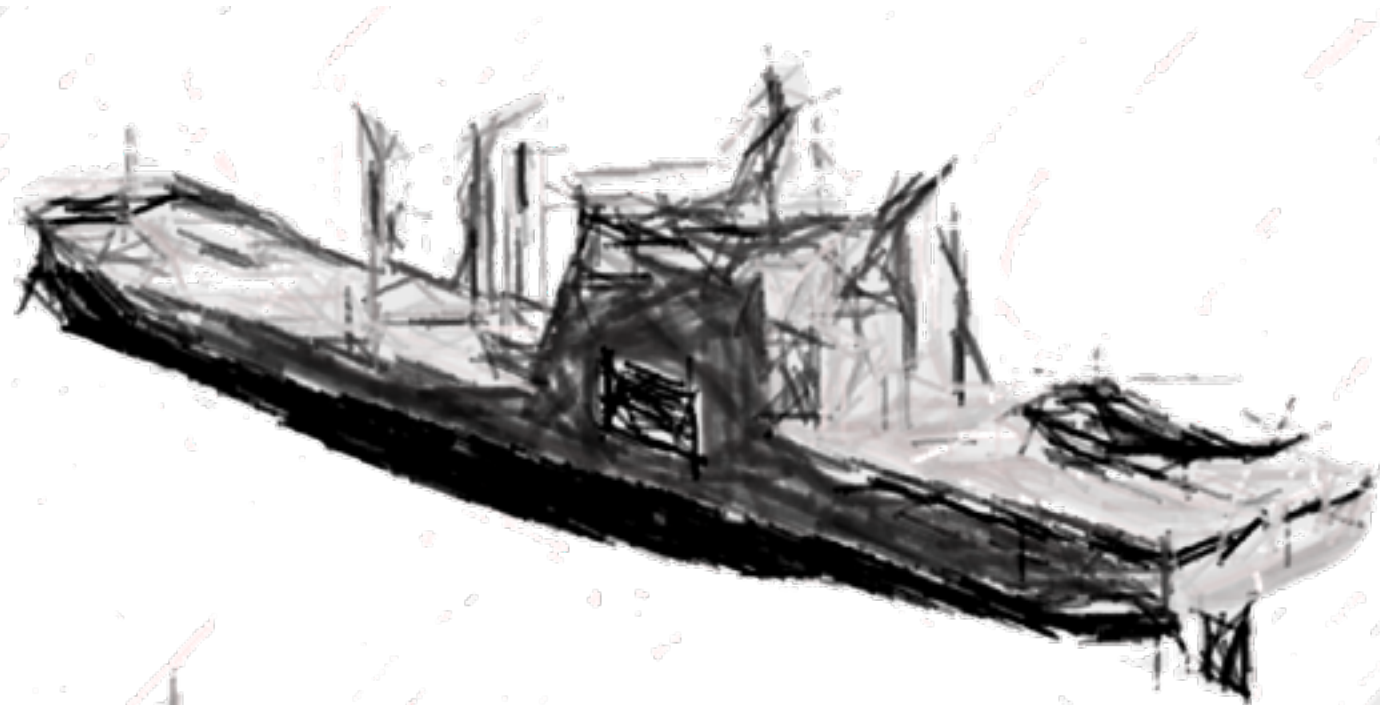


### Operacional

**Availability** : 250 Days  
**Autonomy** : 10000 NM  
**Endurance** : 90 Days  
**Max. Speed** : 18+ kts  
**Cruise Speed**: 14 kts

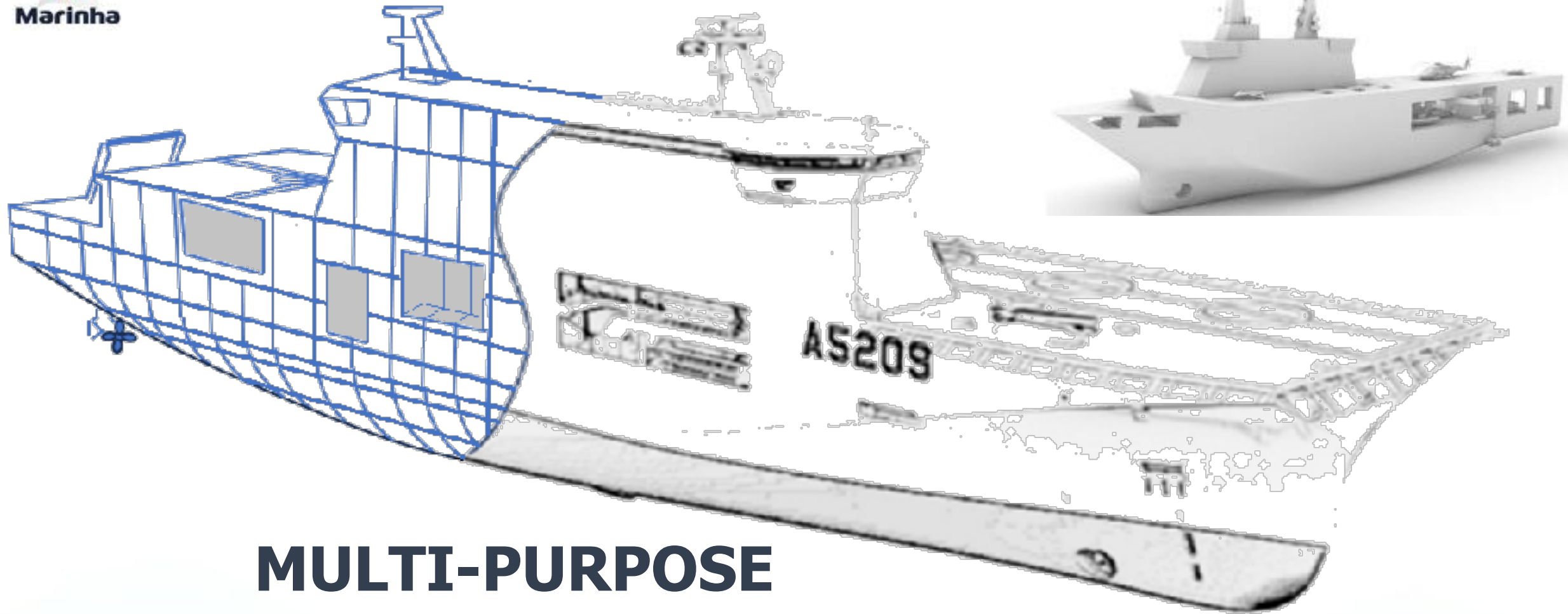


- Multimission Cargo Compartment (Ro-Ro)
- Vehicles deck (Ro-Ro)
- Light & Fast Marine Ops Concept

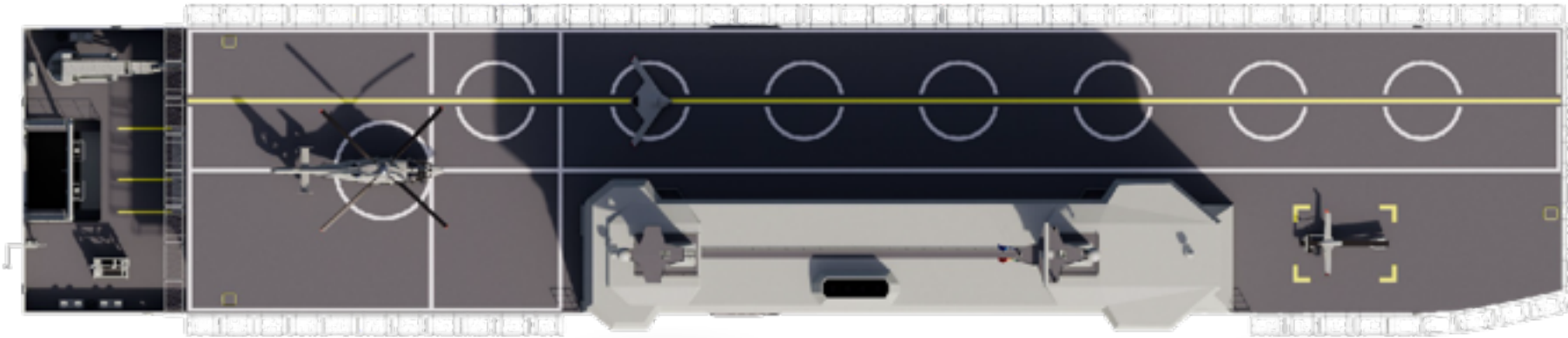


International open tendering  
procedure in course

**EDC expected September 2024**



# MULTI-PURPOSE SUPPORT SHIP (MPX)



### SCIENTIFIC



Collection, processing and transmission of data about the Portuguese Sea

Scientific operations, seabed prospection

Support for economic, scientific and cultural development

### SECURITY



Co-operation with civil security authorities

Disaster relief

Search and rescue at sea

### DEFENCE



Sovereignty Missions in the Portuguese Sea

Surveillance, inspections and supervision in the Portuguese Sea

Evacuation of nationals from dangerous areas



### Dimensions

**Displacement** : 7000 ton  
**Length overall** : 107 m  
**Length bpp** : 100 m  
**Beam** : 20 m  
**Draft** : 5,5 m



### Environment



**Engines** : TIER III  
**Propulsion** : Electric/Battery  
**Bilge Water**: Separator  
**Black Water** : Sewage  
**Waste** : Treated

### Personnel

**Crew** : 48 pax  
**Scientists** : 42 pax  
**UXV ops.** : 42 pax  
**Temporary** : more 100 pax  
**Emergency** : more 200 pax



### Operational

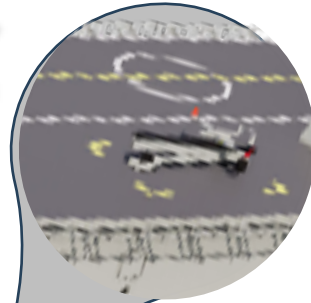
**Availability** : 250 days  
**Op. Area** : 60º Lat N/S(No ICE)  
**Endurance** : 45 days  
**Max. Speed** : 15,5 kts  
**Cruising Speed** : 10 kts



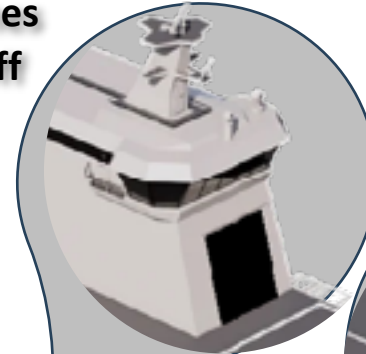
# FLEET TRANSFORMATIONAL VECTORS

## MPX: FUNCTIONALITIES

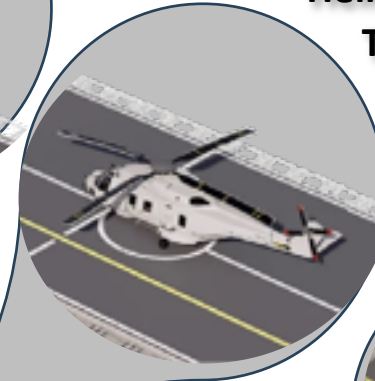
Catapult for UAV launch



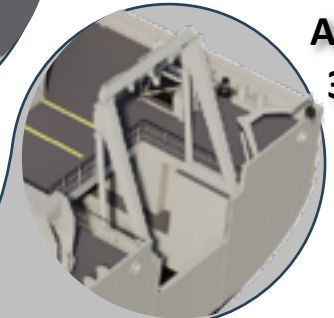
Heli Hangar  
10 tonnes  
take-off



Helideck  
Heli 15 tonnes  
Take-off



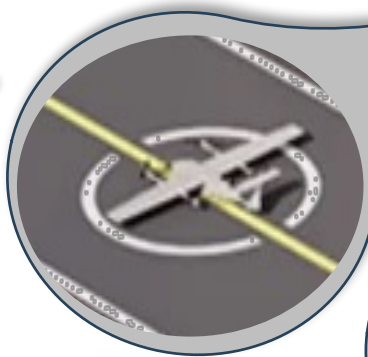
A-Frame  
30 Ton



Crane  
30t @14 m



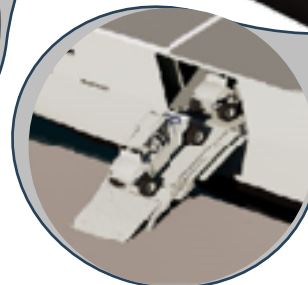
VTOL \*  
UAV



Fixed-wing  
UAV



RO-RO  
Door & Ramp

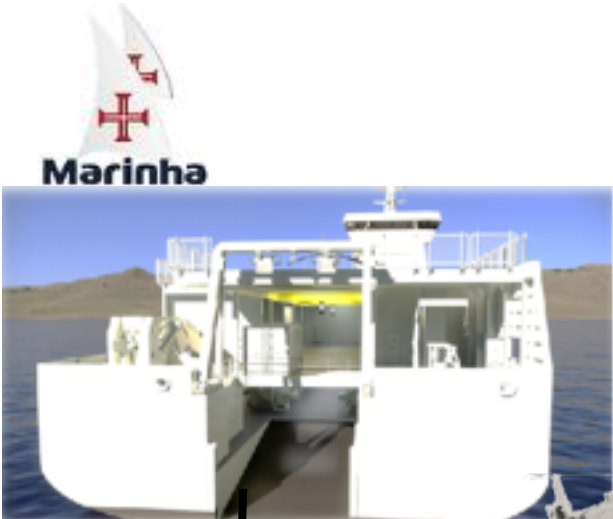
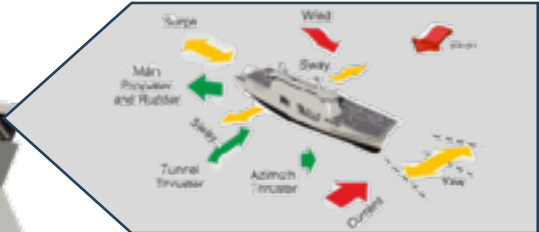


\* Vertical take-off and Landing

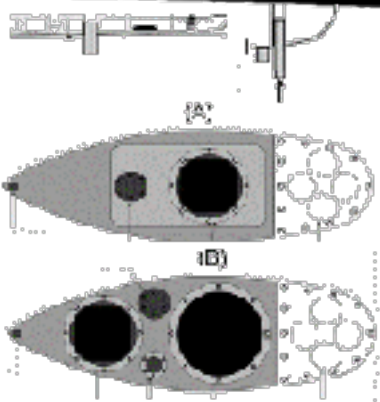
# FLEET TRANSFORMATIONAL VECTORS

## MPX: FUNCTIONALITIES

Dynamic  
Positioning  
DP 1



for Scientific Equipment deployment





### Ship's capabilities to embark and transport material

Loading up to 18 TEU  
(20-foot containers)



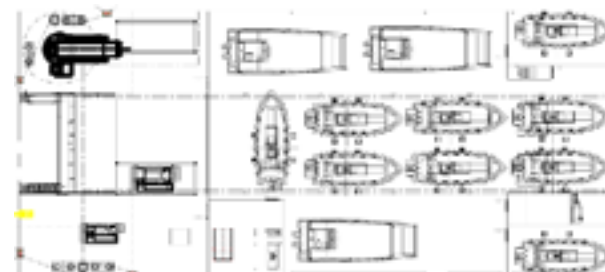
Or

Embarking up to 18  
Vehicles  
(ambulances)



Or

Boarding up to  
10 more  
Boats/Landing craft/RHIB's





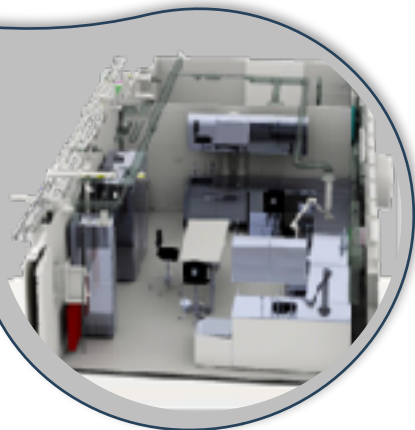
# Scientific capabilities



ROV Luso

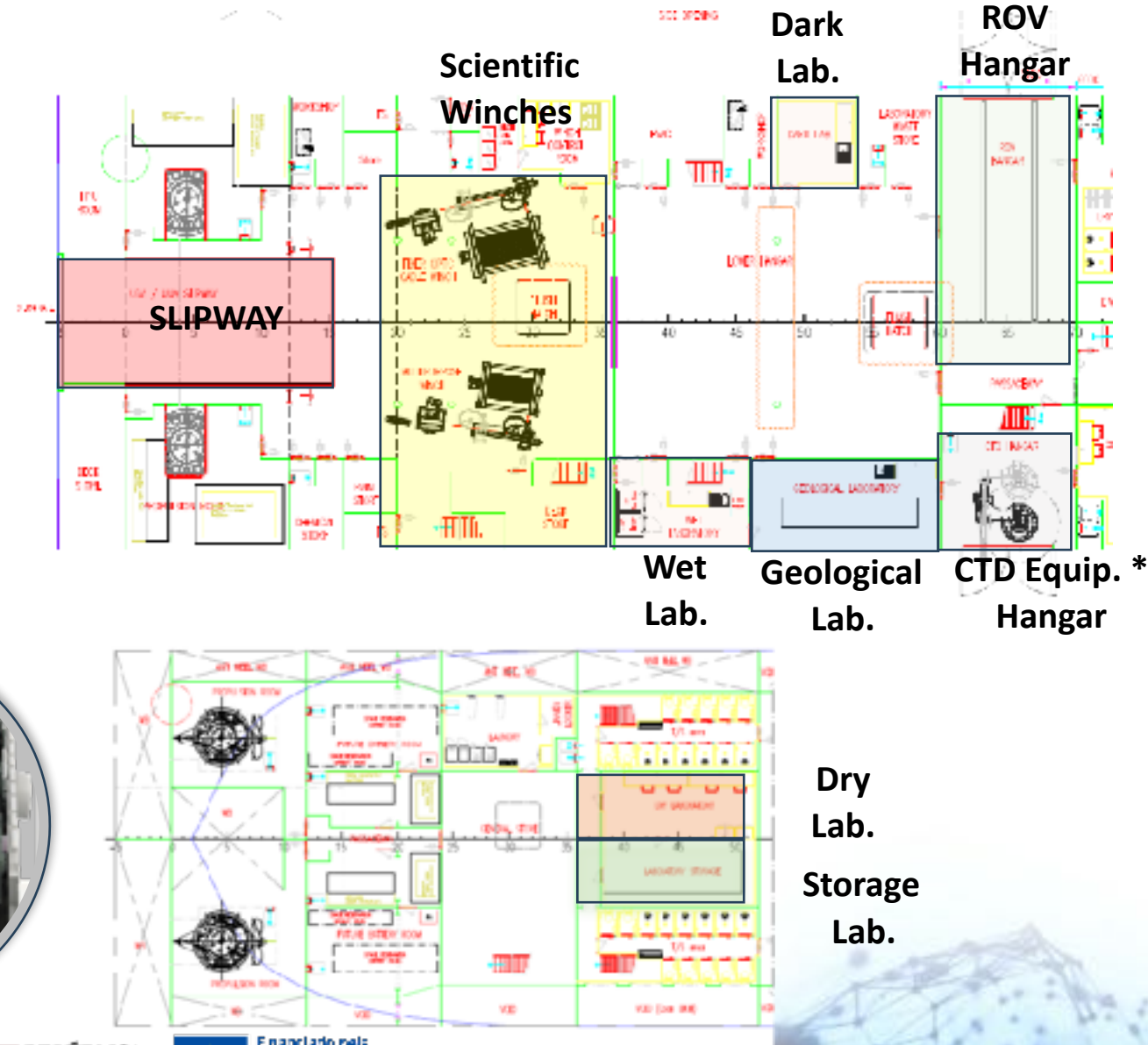


CTD Equipment \*



# FLEET TRANSFORMATIONAL VECTORS

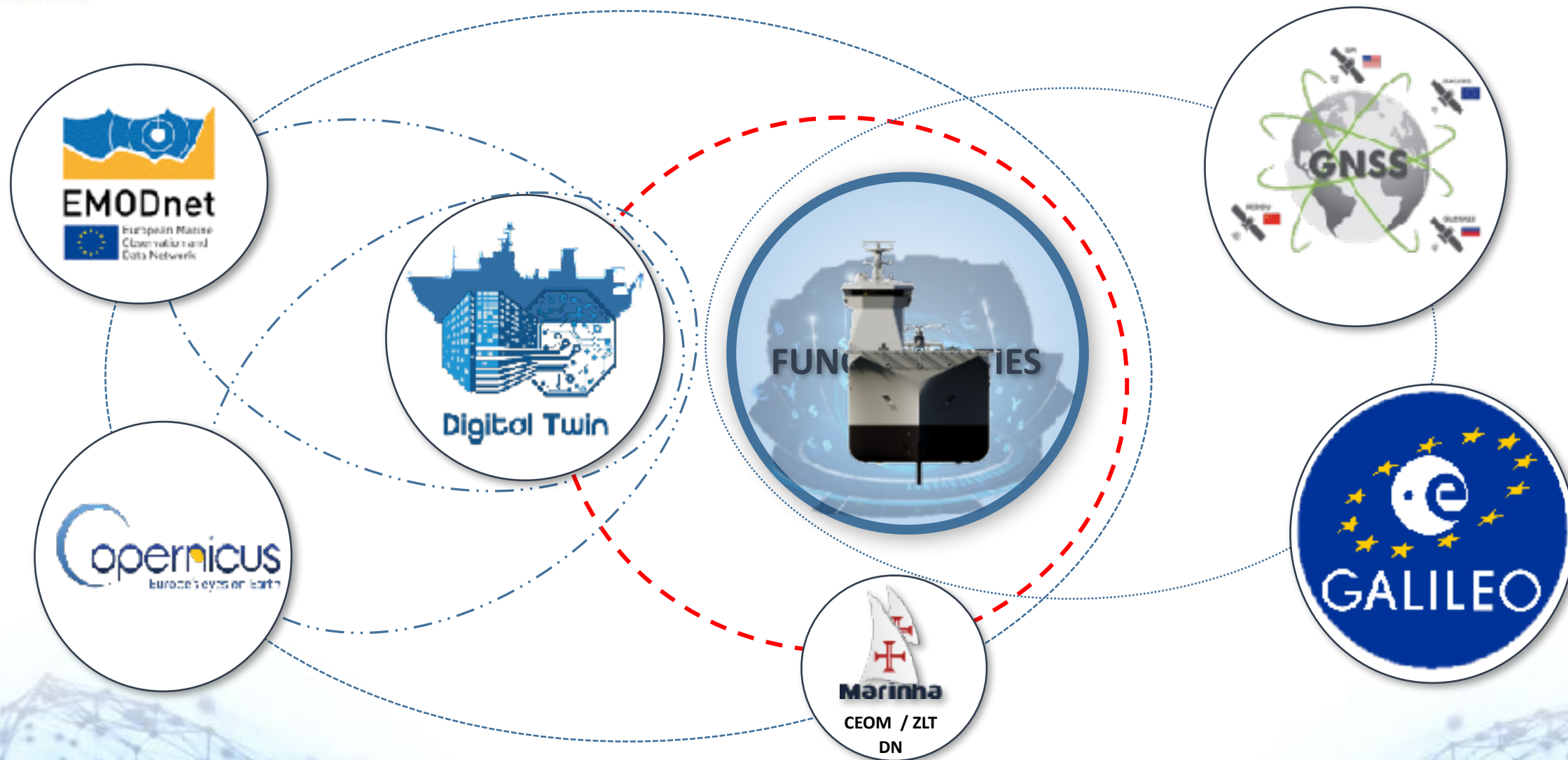
## MPX: CAPABILITIES



\* Conductivity, Temperature and Depth

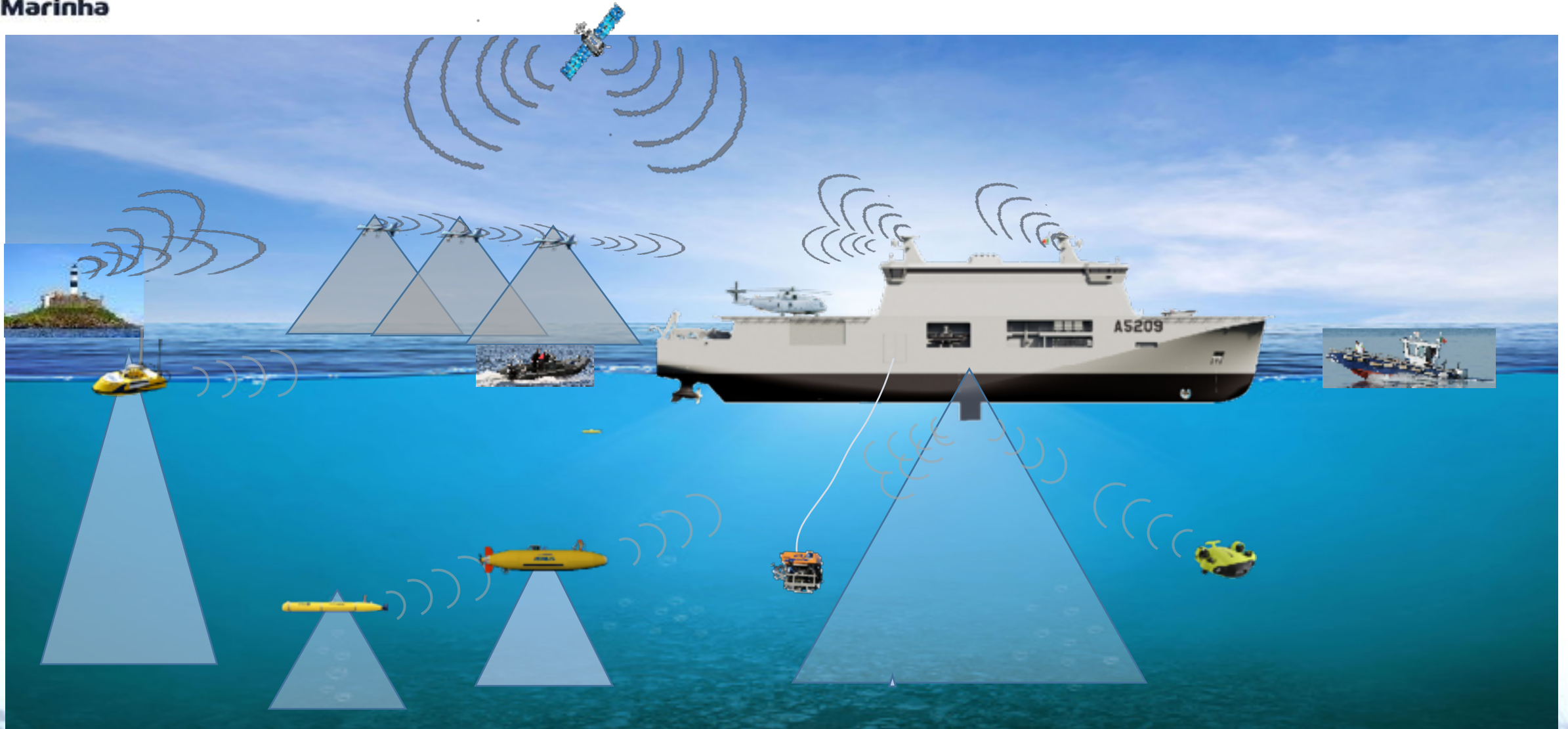


Financiado pela União Europeia



# FLEET TRANSFORMATIONAL VECTORS

## MPX: MULTI-DOMAIN OPERATIONS





# GENETIC TRANSFORMATION OF THE PORTUGUESE NAVY FLEET

## MAIN TOPICS

PORTUGUESE NAVY FLEET TRANSFORMATION **1**

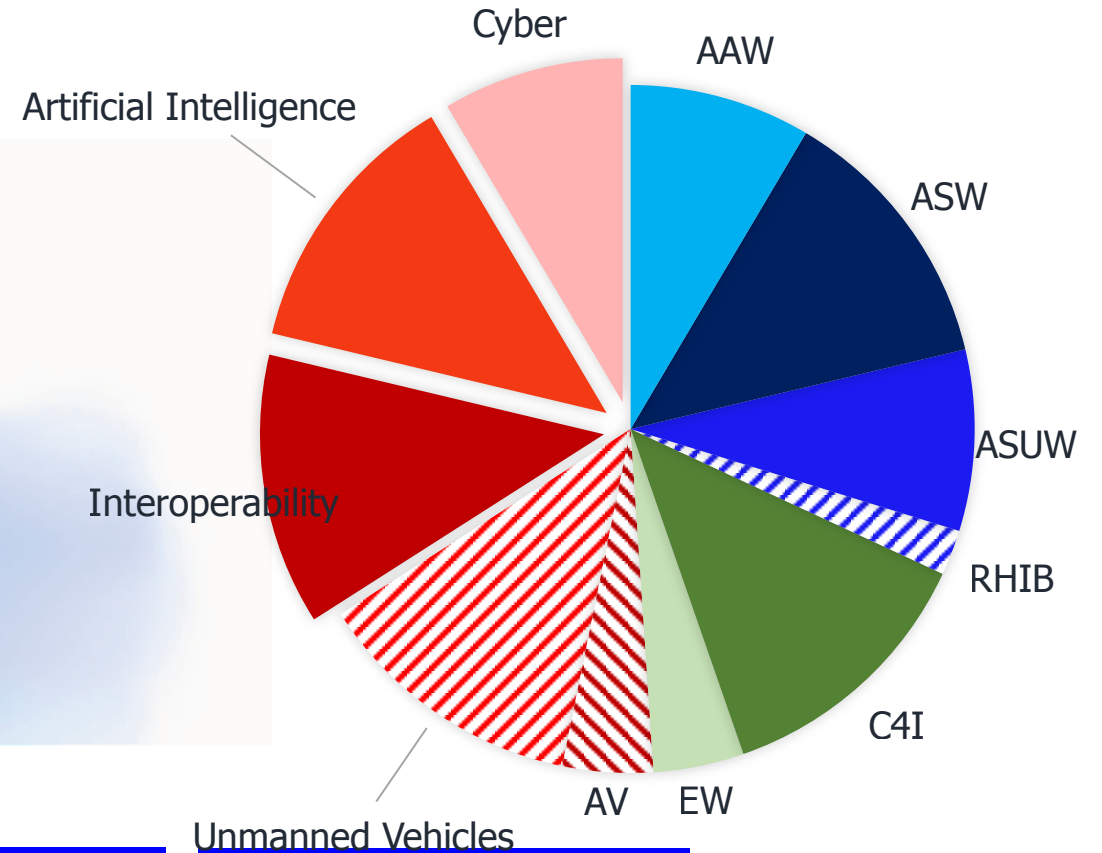
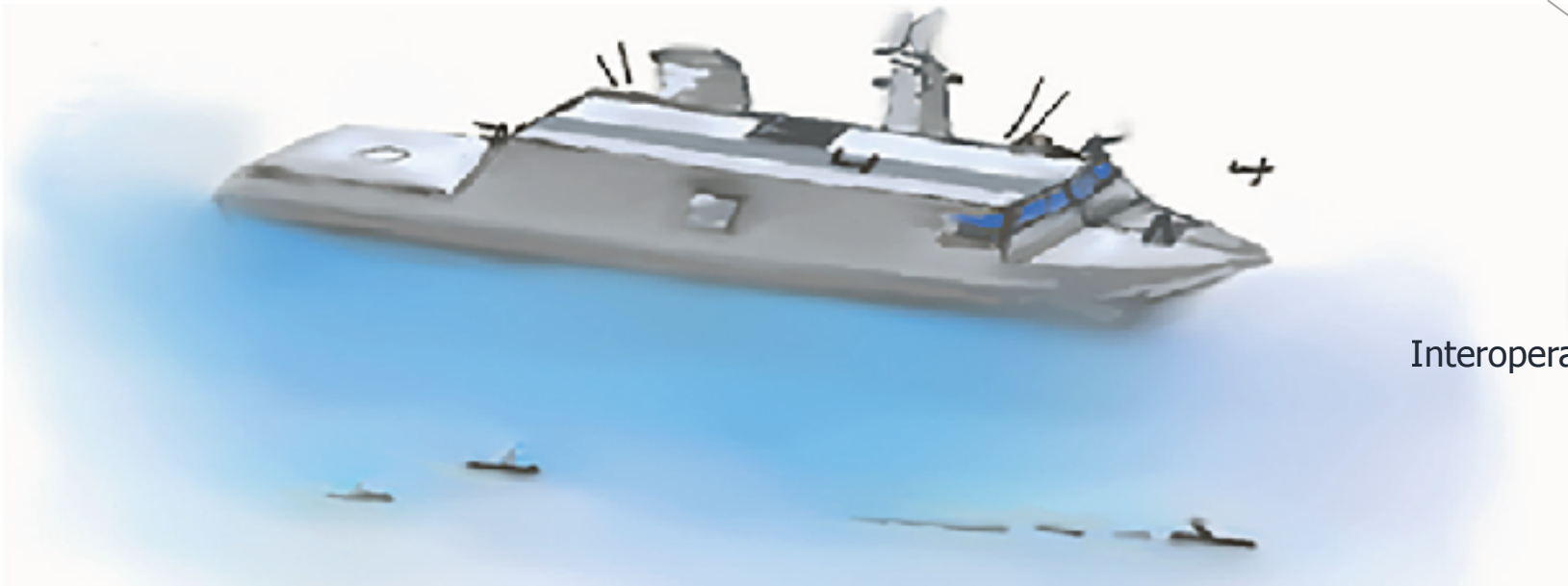
FLEET TRANSFORMATIONAL VECTORS **2**

**NEXT GENERATION FRIGATES** **3**





# NEXT GENERATION FRIGATES TRANSFORMATIONAL DRIVERS



**New Operational  
rational**

Modularity

More  
Technology

**Lower costs**

**New Design**

Enhanced  
capability

More Ships

**Robotization**

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