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1

MUS as force multipliers

2

Unit X31

3

REPMUS 23

4

**REPMUS 24 Advancing
Integration and Interoperability**



MUS as organic assets of multipurpose ships

- Ship:**
- Unmanned Systems Interoperable (Hard and Soft)
 - C3: OTH, Multiband, Resilient and Discreet
 - Big data processing at high speed
 - Networked operations capable
 - Modular onboard systems

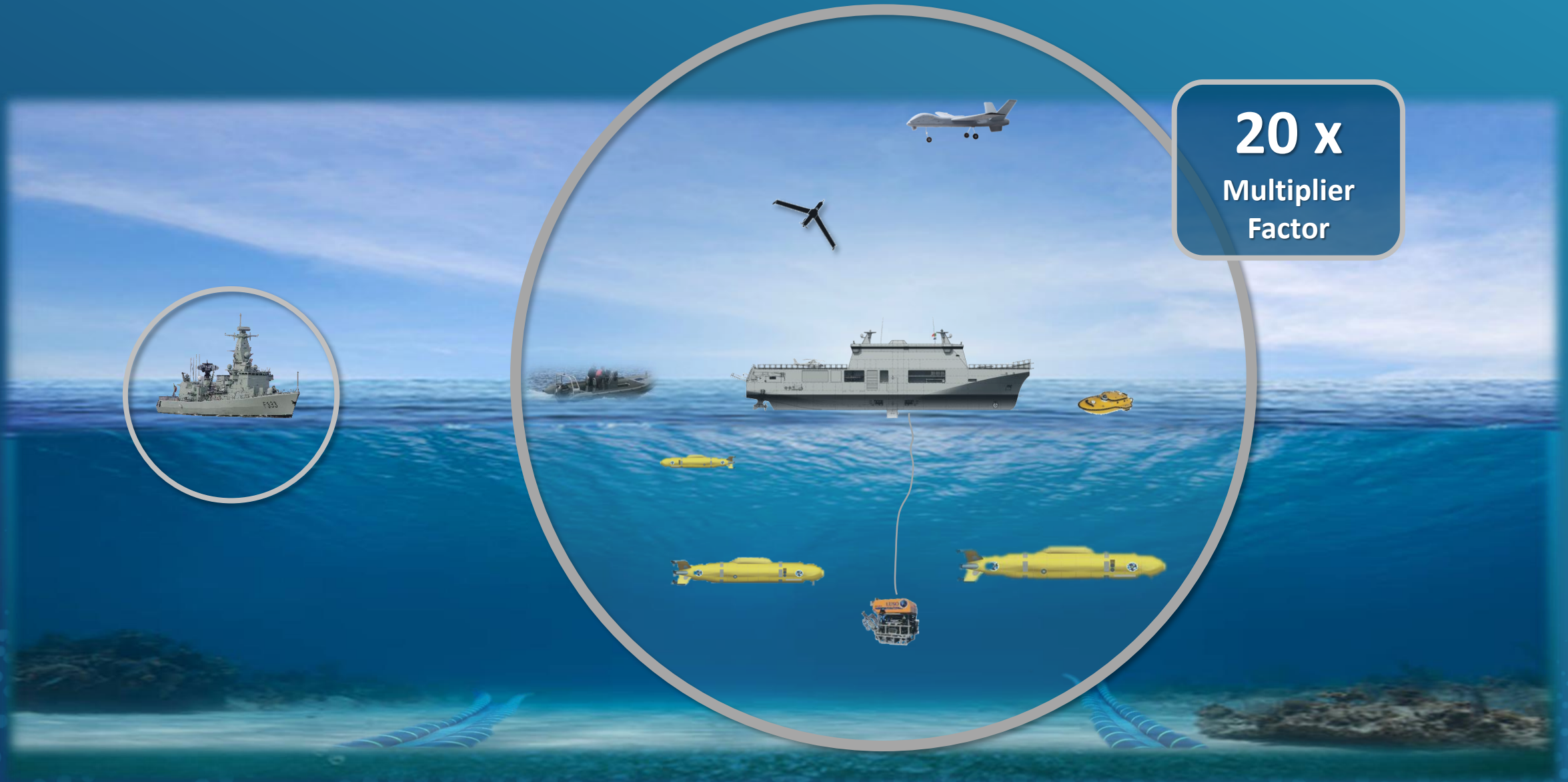
Multipurpose Ship



- UUV:**
- Bottom Sweep capability
 - Mine neutralization capability
 - Multistatic detection capability
 - Weapons and sensors delivery
 - UW Comms
- UAV:**
- Comms relay and data mule
 - ISR & EW payloads
 - Weapons and sensors delivery
 - UUV release and recovery
- USV:**
- Comms relay and data mule
 - Weapons and sensors delivery
 - UUV release and recovery
- UW Comms**
- Maritime Operations:** ASW, NMW, AWW, Amphib, HP, SAR, Law Enforcement ...

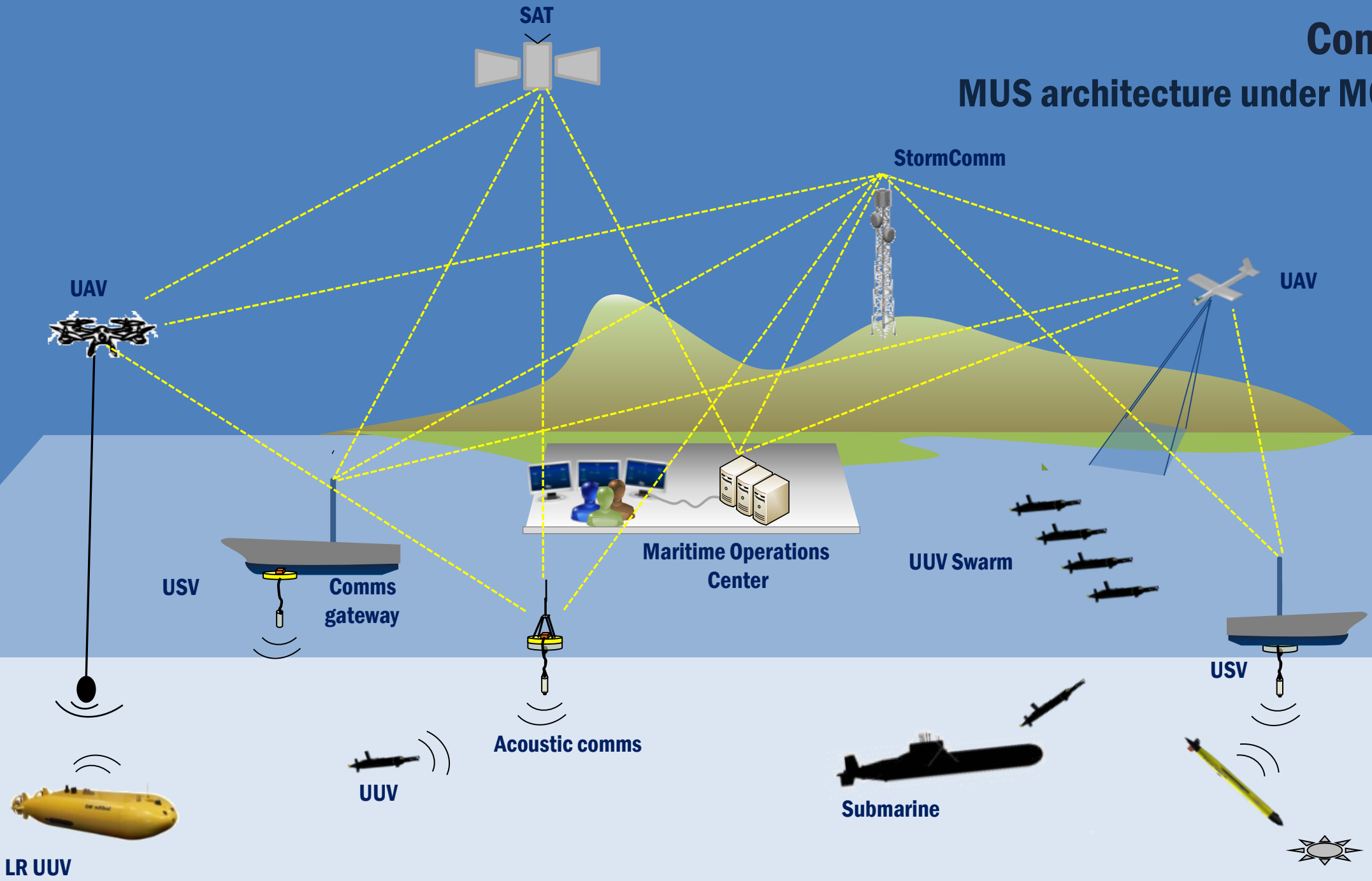


MUS AS FORCE MULTIPLIERS IN MULTIDOMAIN OPERATIONS



20 x
Multiplier
Factor

Concept MUS architecture under MOC C2



THE UNIT X31

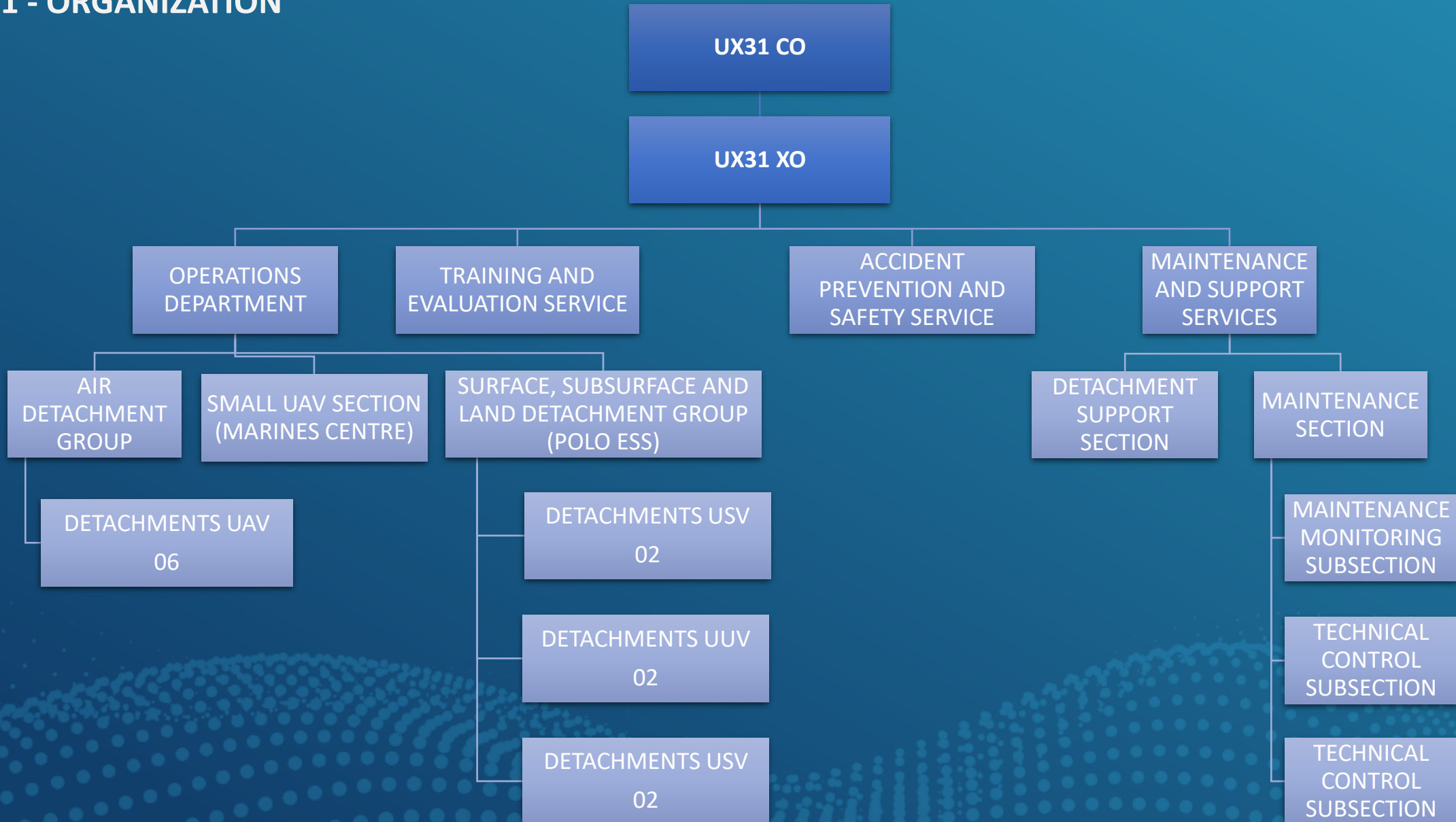


X31

Portuguese Navy Unmanned Systems Sqn



X31 - ORGANIZATION



X31 – MARITIME UNMANNED SYSTEMS



UAV



UAVISION - SPYRO



BEYOND VISION – HEIFU PRO



UAVISION– OGASSA 42



BEYOND VISION– VT One



AV – PUMA 3 AE

USV



X – 2901 “SUICIDE BOAT”



X – 2801 “MACARÉU”



X – 2601

UUV



“SEACON”



“GAVIA”



X Operational
Experimentation



3 Domains



1 Command & control



REPMUS 23 OPEX EXERCISE

REPMUS 23 – PARTICIPANTS

NATIONS



REPMUS 23 – PARTICIPANTS

NATO HQ & COE





REPMUS 23 – PARTICIPANTS ACADEMIA & INDUSTRY





REPMUS 23 – PRT SUPPORTING ASSETS



1x FFGH - **DFAL**



1x SSG - **ARPA**



2x NPO - **SETU+SINE**



1x AGS - **DCAR**



1x AGSC - **ANDR**



1x LFR - **CASS**



NAVY MARINES
(AMPH OPS, FP&HP, etc...)



NAVY DIVERS



REPMUS 23 – Participants Assets

UAV	USV	UUV/AUV	Warships	Research or Support Vessels
45	18	33	10	02



F593 ITS *Carabinieri*



M622 FS *Pluton*



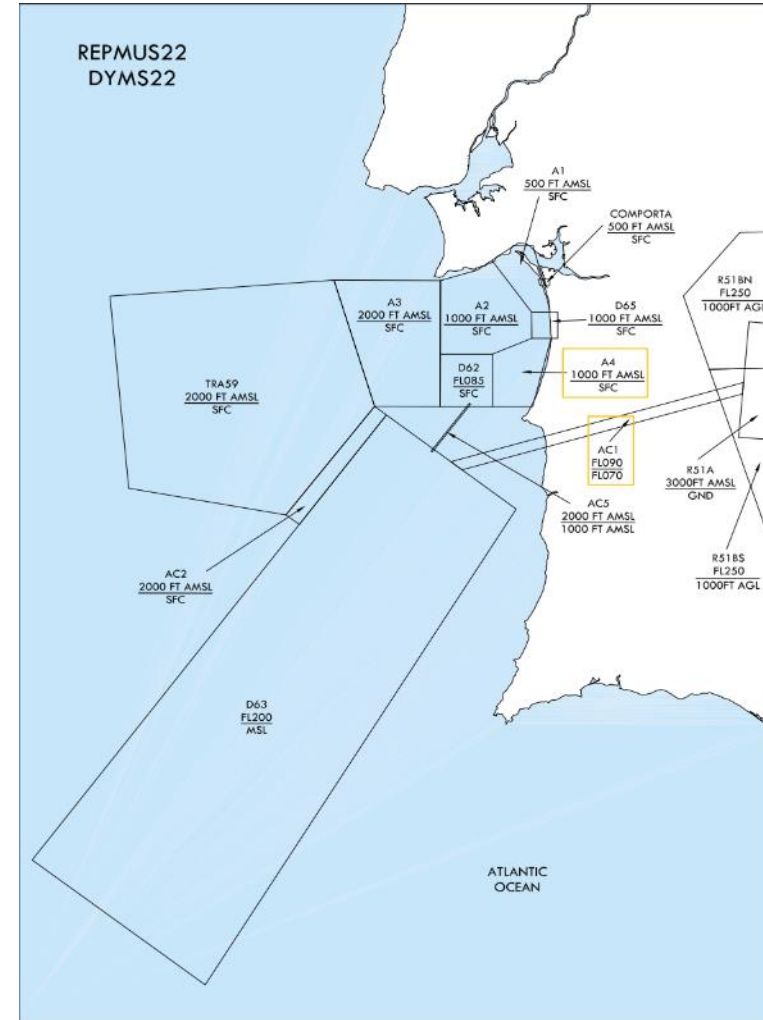
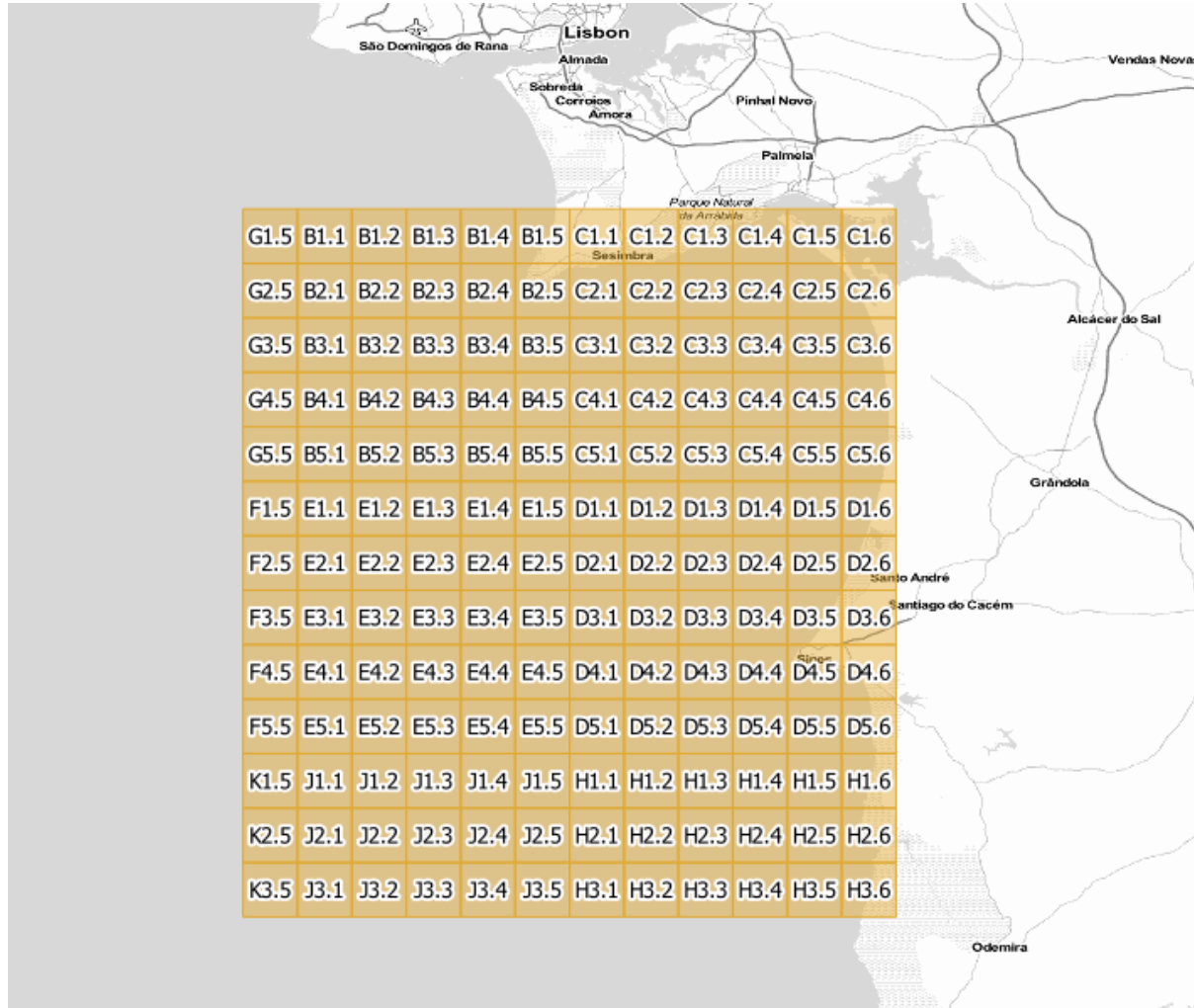
P46 ESPS *Furor*



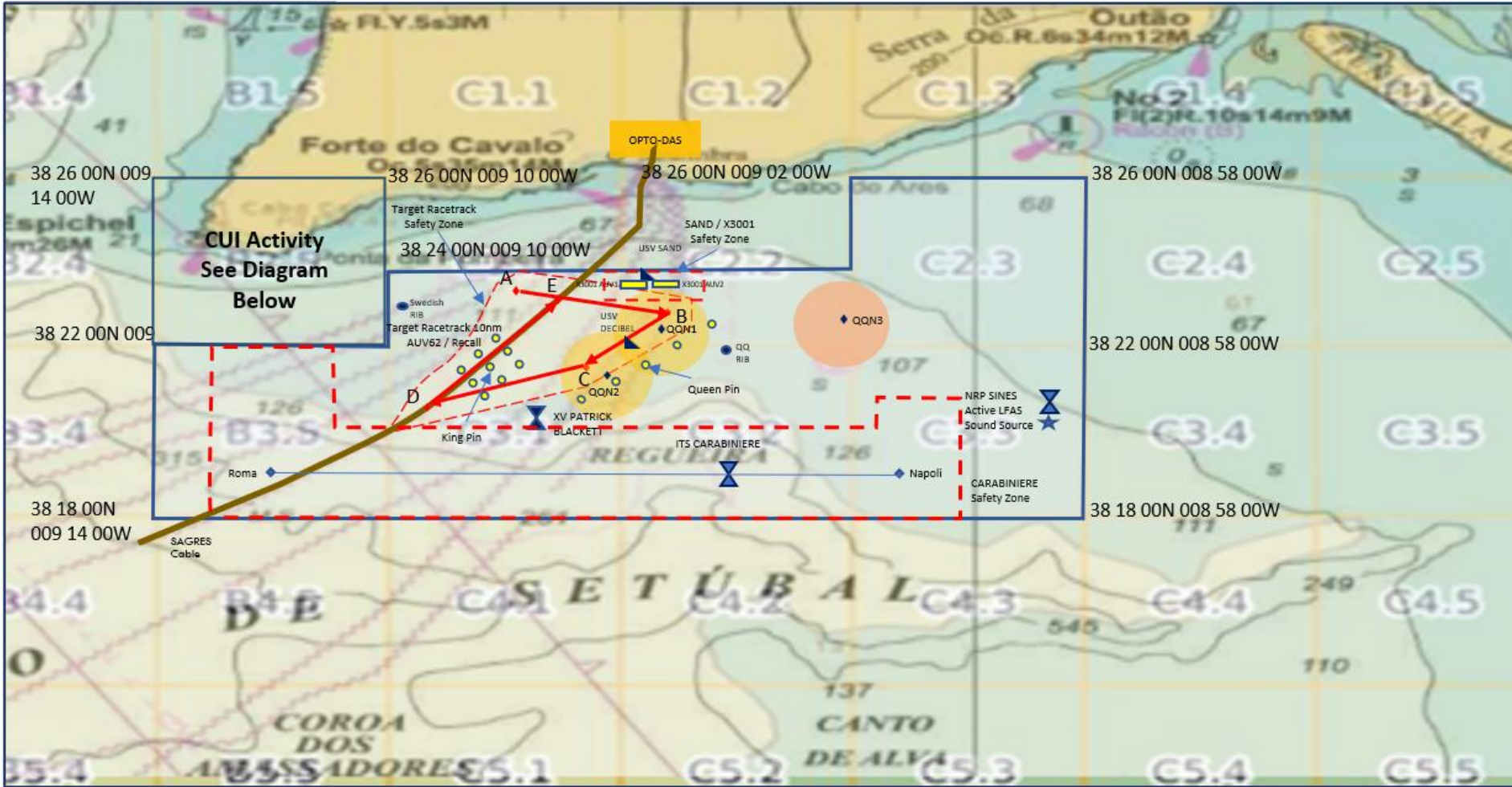
Mar Profundo (INESTEC)



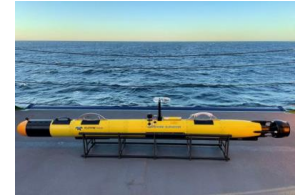
XV Patrick Blackett



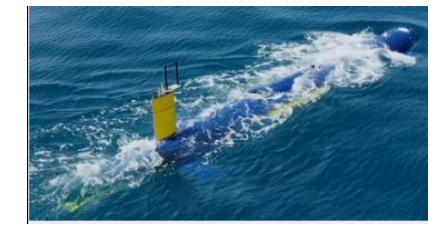
REPMUS 23 – UWW



XV PATRICK BLACKETT



GAVIA



BLUE WHALE



SAAB SAYEE



USV SAND



MALLOY T600

REPMUS 23 – AWW



MARTAC T24)



T400



ZOE



V-BAT AI

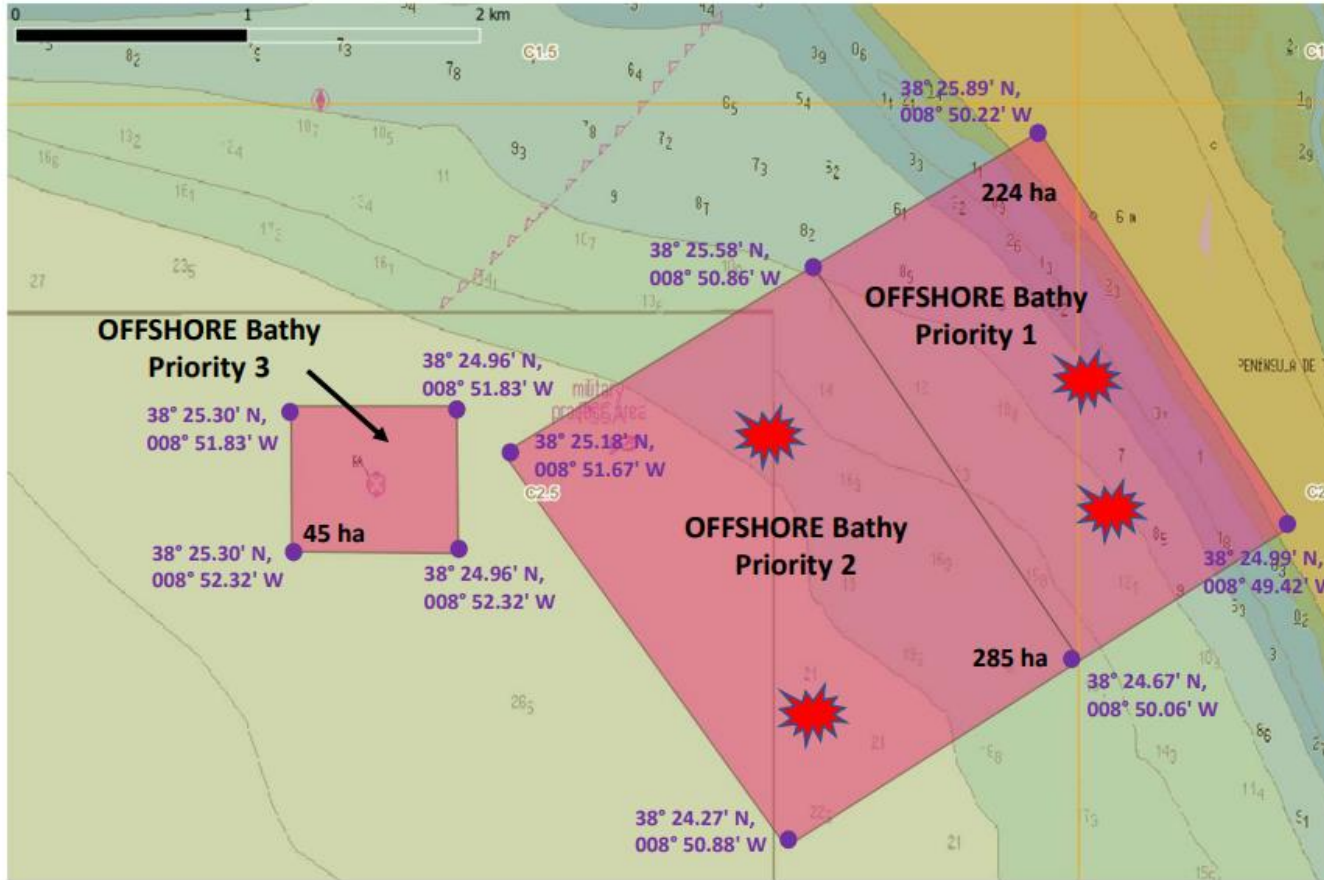


UX 31 HEIFU



S100

REPMUS 23 – REA



DRIX USV (ARDITI EXAIL)

SEAD-23



SSS AUV



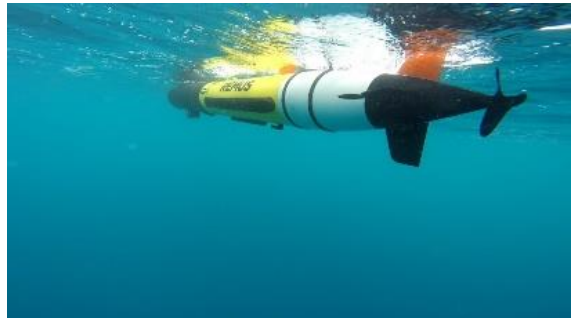
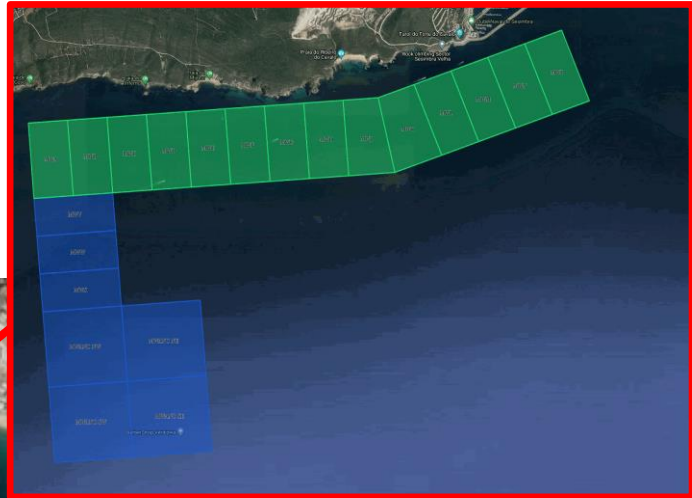
SCHIEBEL
CamCopter S-100 with PILLS



AIRBUS



REPMUS 23 – NMW



REMU 100(NG/LEGACY)



GAVIA



FS PLUTON



GPD MEDITERRANÉE

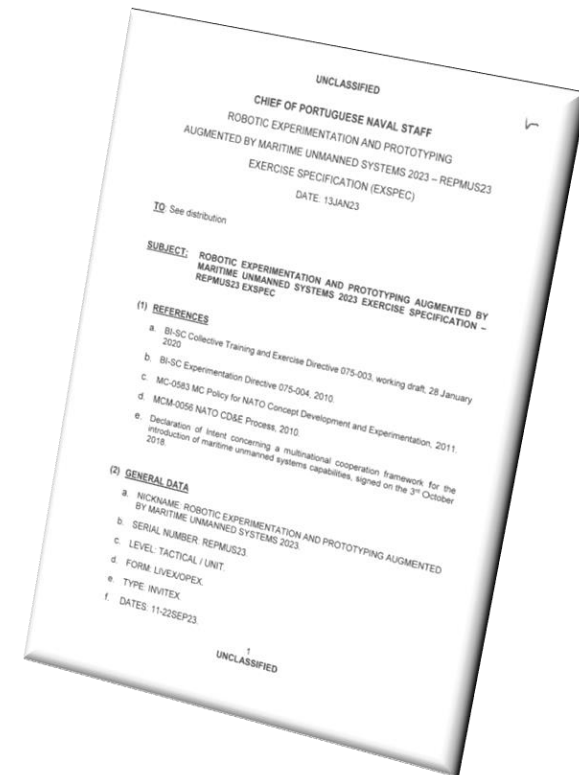


ALISTER 9

REPMUS 24

EXERCISE SCHEDULE

- **RECEPTION & STAGING (02-06SEP)**
- **PHASE I – INTEGRATION AND EXPERIMENTATION (09-13SEP24)**
- **PHASE II – DIRECTED EXPERIMENTATION (16-20SEP24)**
- **PHASE III – TACTICAL EXPERIMENTATION (21-26SEP24)**
- **REPORTING AND ANALYSIS PHASE**

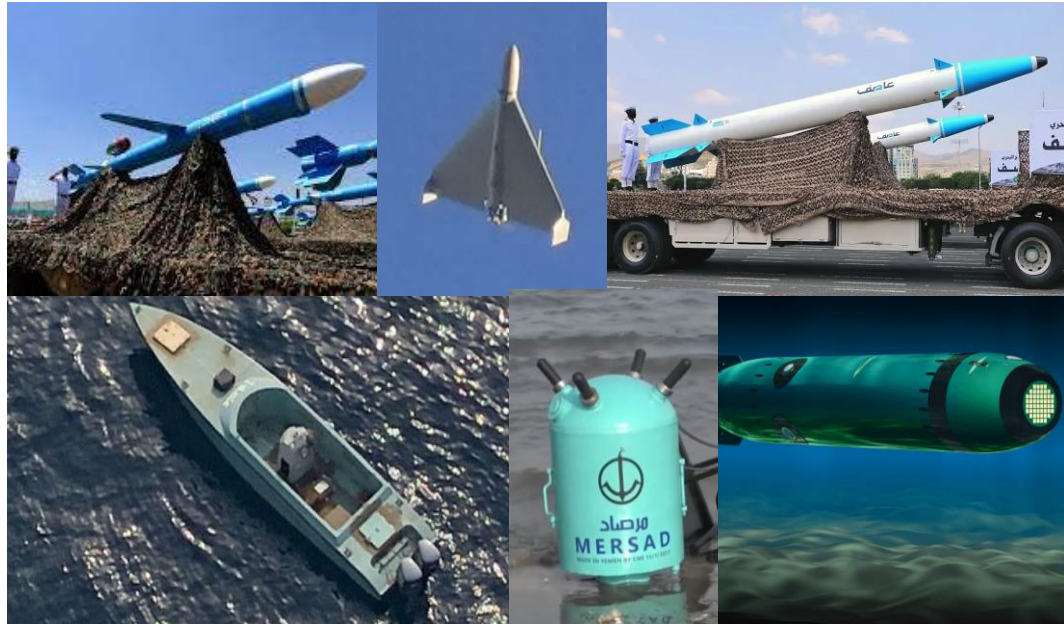


REPMUS 24

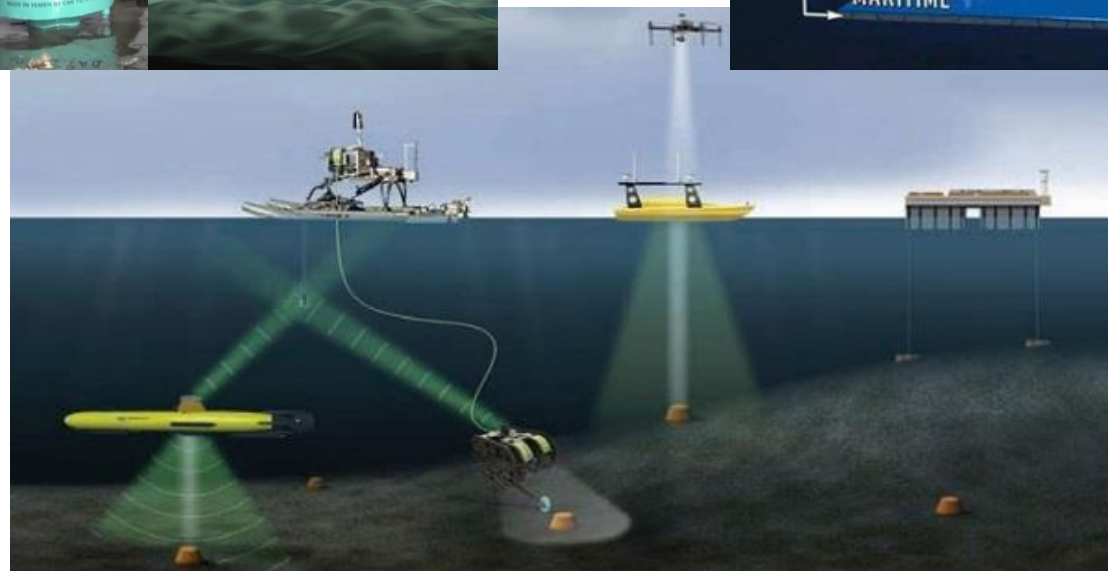
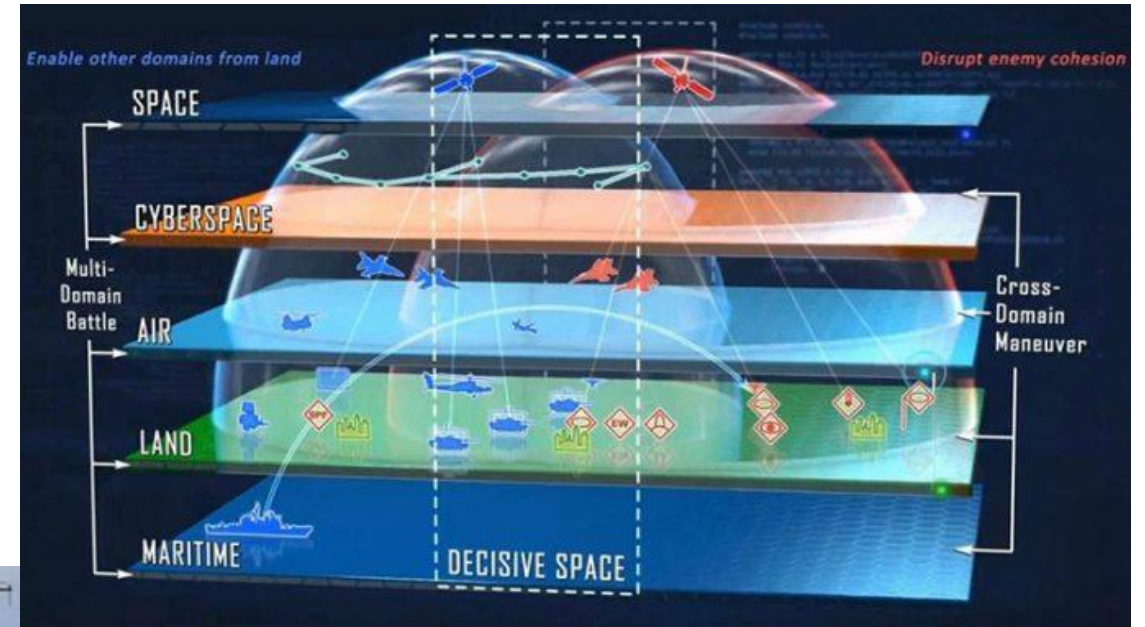
EXERCISE FOCUS AREAS

Advancing allied interoperability

Asymmetric UxV threats



Multidomain operations & C2 (STANAG 4817)



UW Battle Space



QUESTIONS ?

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