NACIONĀLIE BRUŅOTIE SPĒKI

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ANALYSING AND CLEARING MINES IN THE BALTIC SEA

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AGENDA

- Use of sea mines in Baltic sea
- Baltic sea environment (effect to ML and MCM)
- Use of MCM system (Latvian Navy)
- Mission analyse and COA
- PMA

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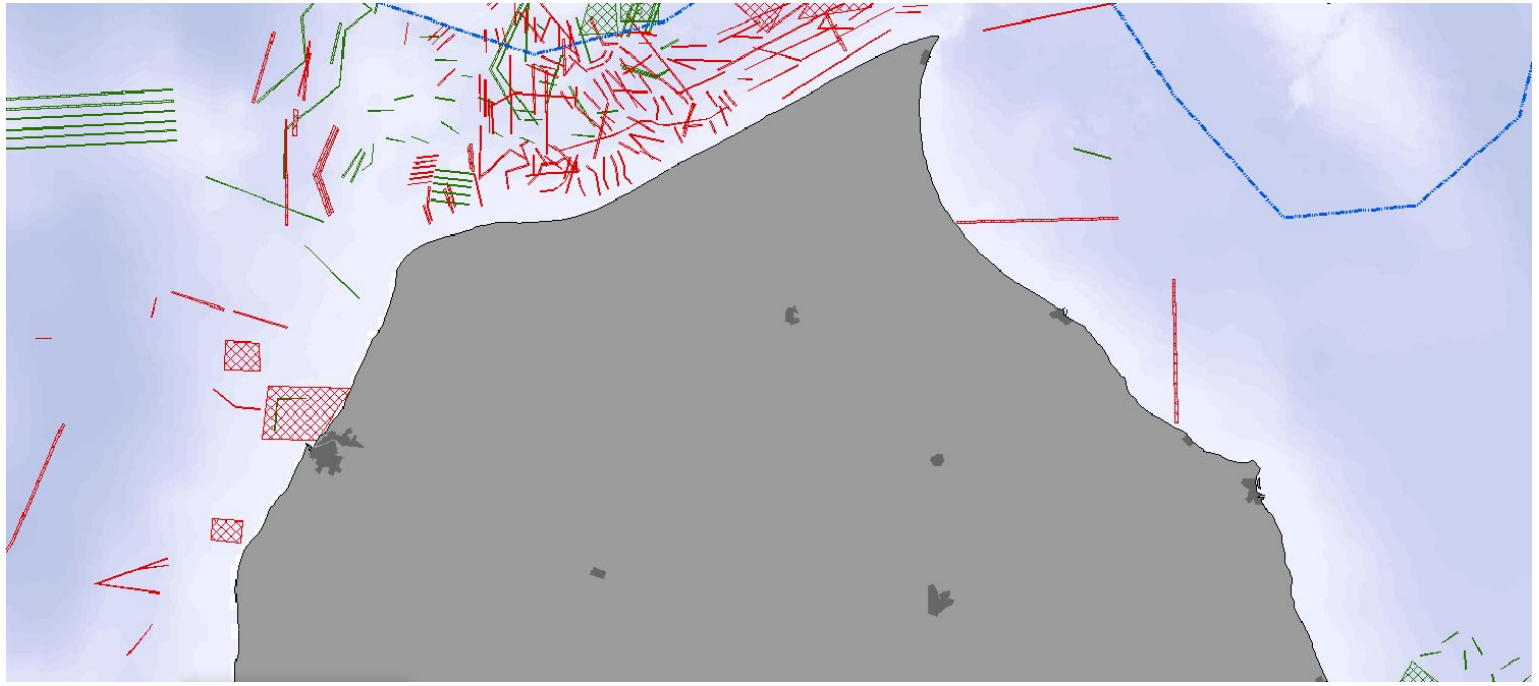
USE OF SEA MINE IN LATVIAN TTW



- WW I & WWII
- choke points
  - Irbe strait
- Approaches to harbours
- Anti landing
- Primary using mine line
- Approaches to harbours but not in harbours
- No deep-water ML
- Variable mine delivery systems (surface, sub surface, air)

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BALTIC SEA ENVIROMENT

Bottom Type
- Various Bottom type from A to D
- High Clutter density
- Sand with rock
- Mine could be hidden

No influence from current and tides

Sonar conditions
- In summer SVP have impact on MCM OPS
- At depth layers are expected

Areas with mixture with fresh water (Riga bay) creates challenges for MCM OPS

MCM planers to take into account
- SVP statistics
- Previous data from RS OPS
- MCM sensors capabilities and planed mission set
- Calculated A&B values could be different from realistic

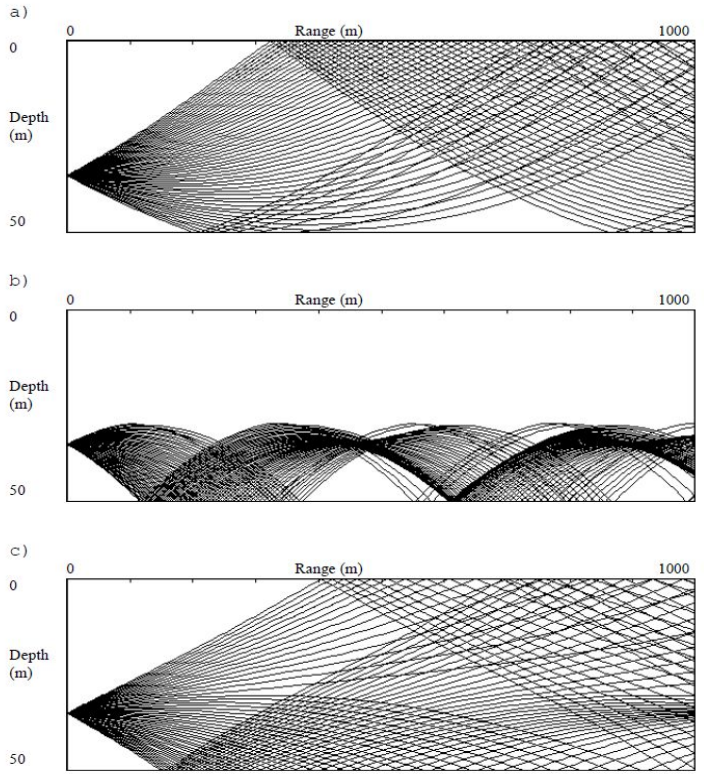

Figure 7.3 Raytraces for Site C. (a) March, (b) August, and (c) December.

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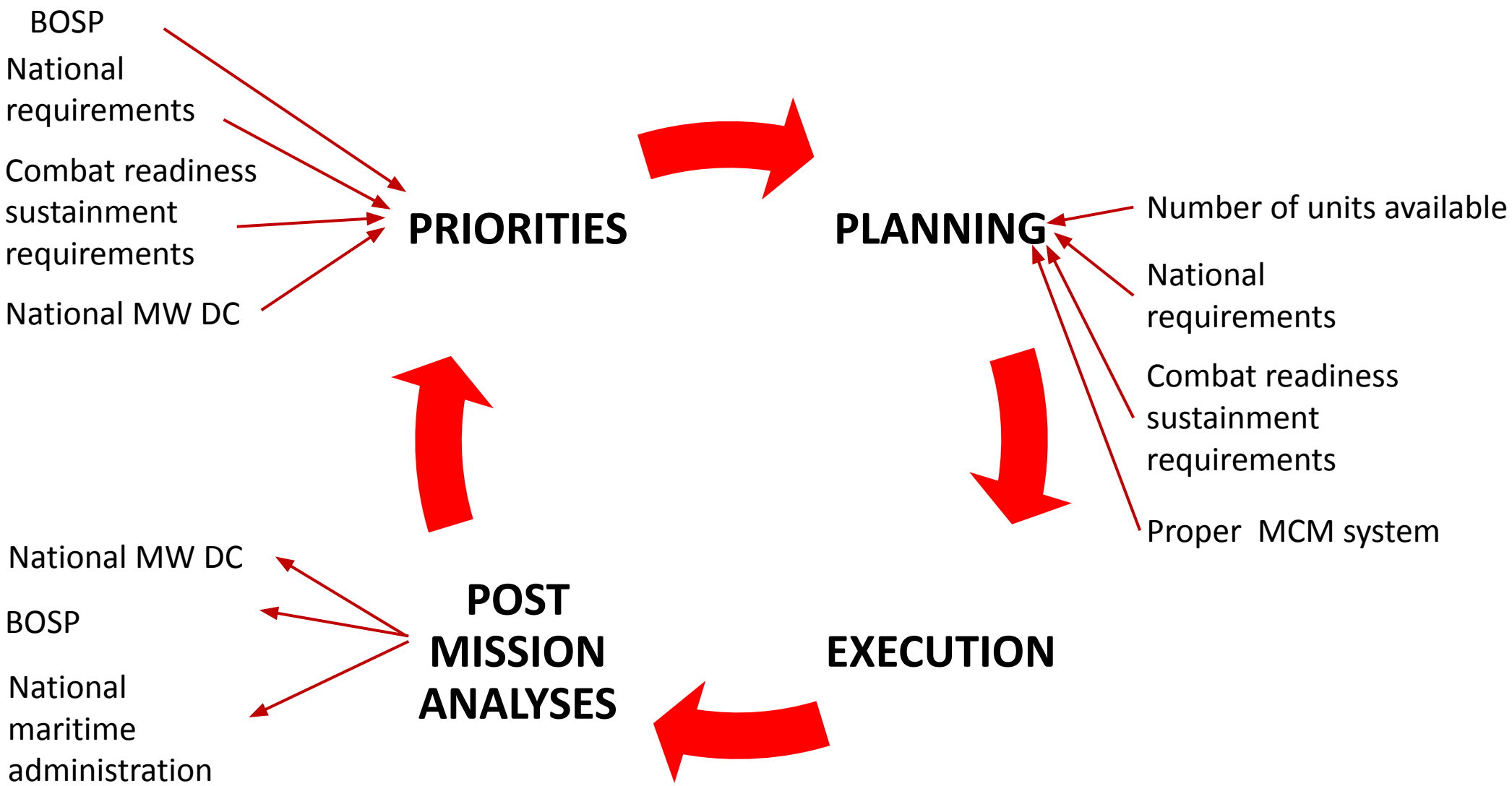
WAY OF MCM OPERATIONS IN LATVIAN NAVY



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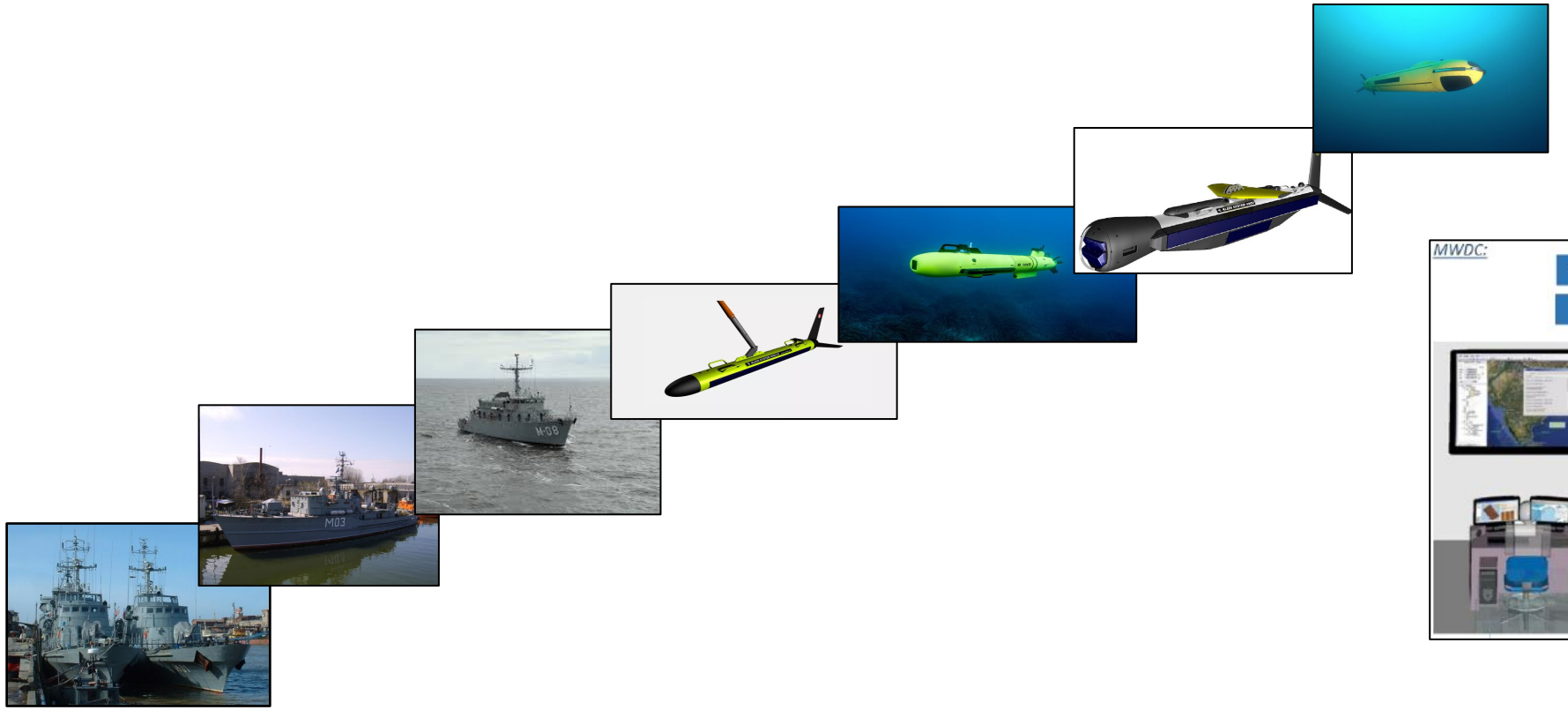
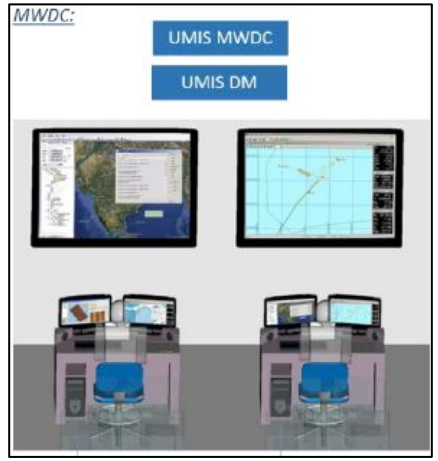
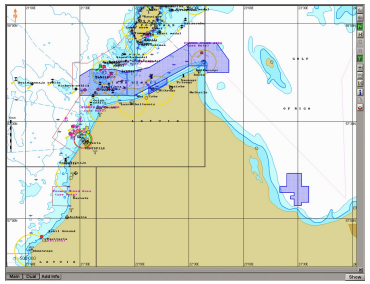
USE OF MCM SYSTEM IN LATVIAN NAVY





MINU KARADARBĪBAS DATU CENTRS
MW DC



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GENERAL REQUIREMENTS

- Number of platforms to be upgraded : 3 MCMV
- Type of unmanned systems: medium size AUV with SAS
- Upgraded platforms to be able to conduct MCM :
  - Against all type of mine at the depth until 300m
  - In wide range of environmental conditions
  - Operate expeditionary
- Replace ‘’old’’ MWDC software IAW STANAG
- Two operator places should be in use for MWDC structure

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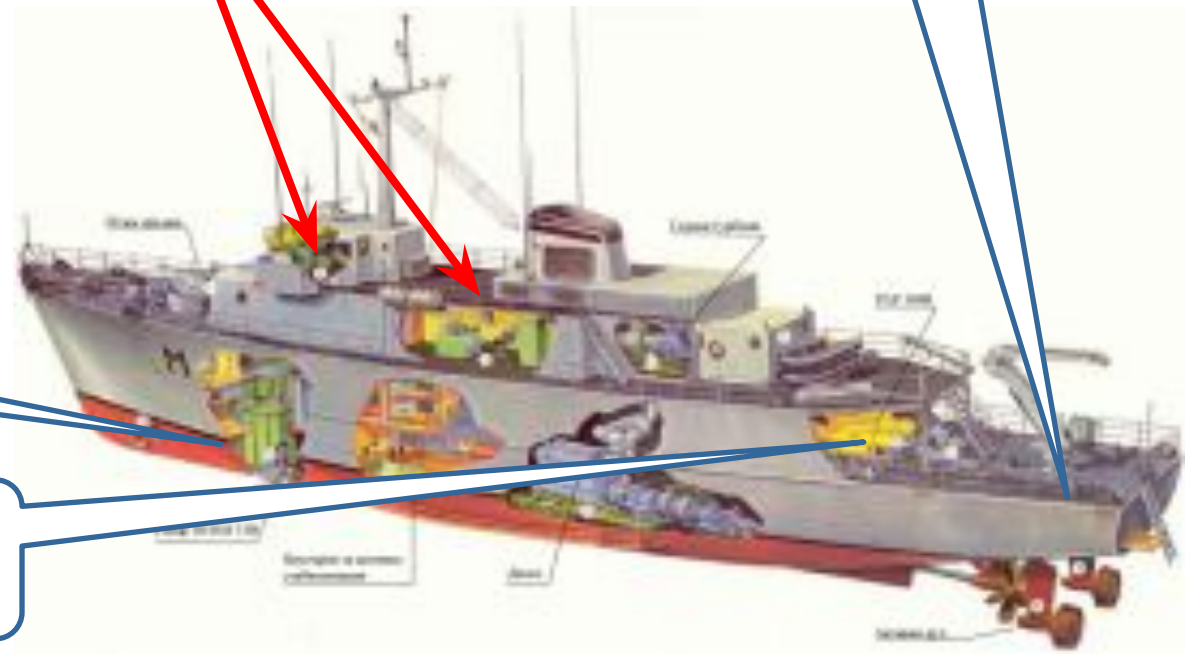
MCM UPGRADE PROGRAMM

Command & Control
WECDIS, MCM P&E

Midsize
AUV with
SAS

HMS
DUMB -21B

New ROV
system



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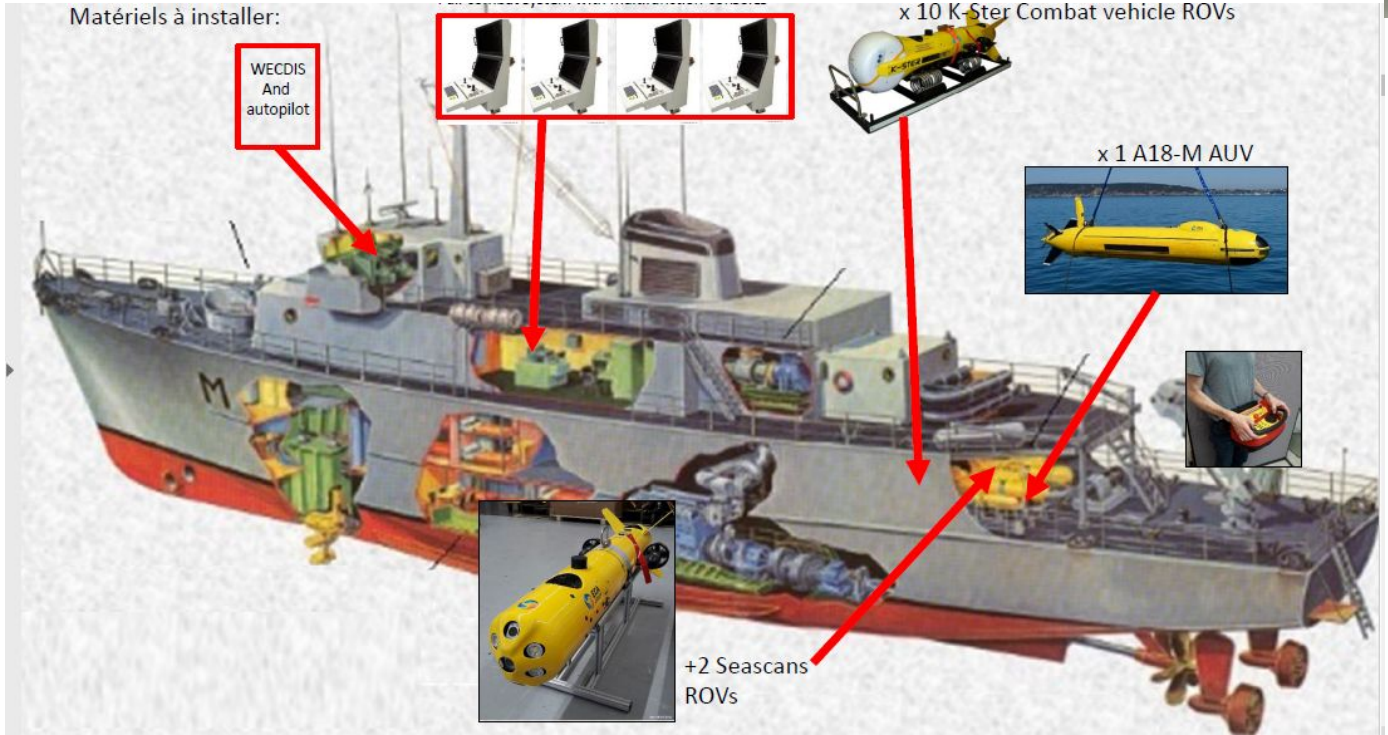
SUPPLIERS AND TIME LINE

- **ECA Robotic (EXAIL) is main supplier with cooperation iXblue, SIREHNA, SFS and Latvian local industry**



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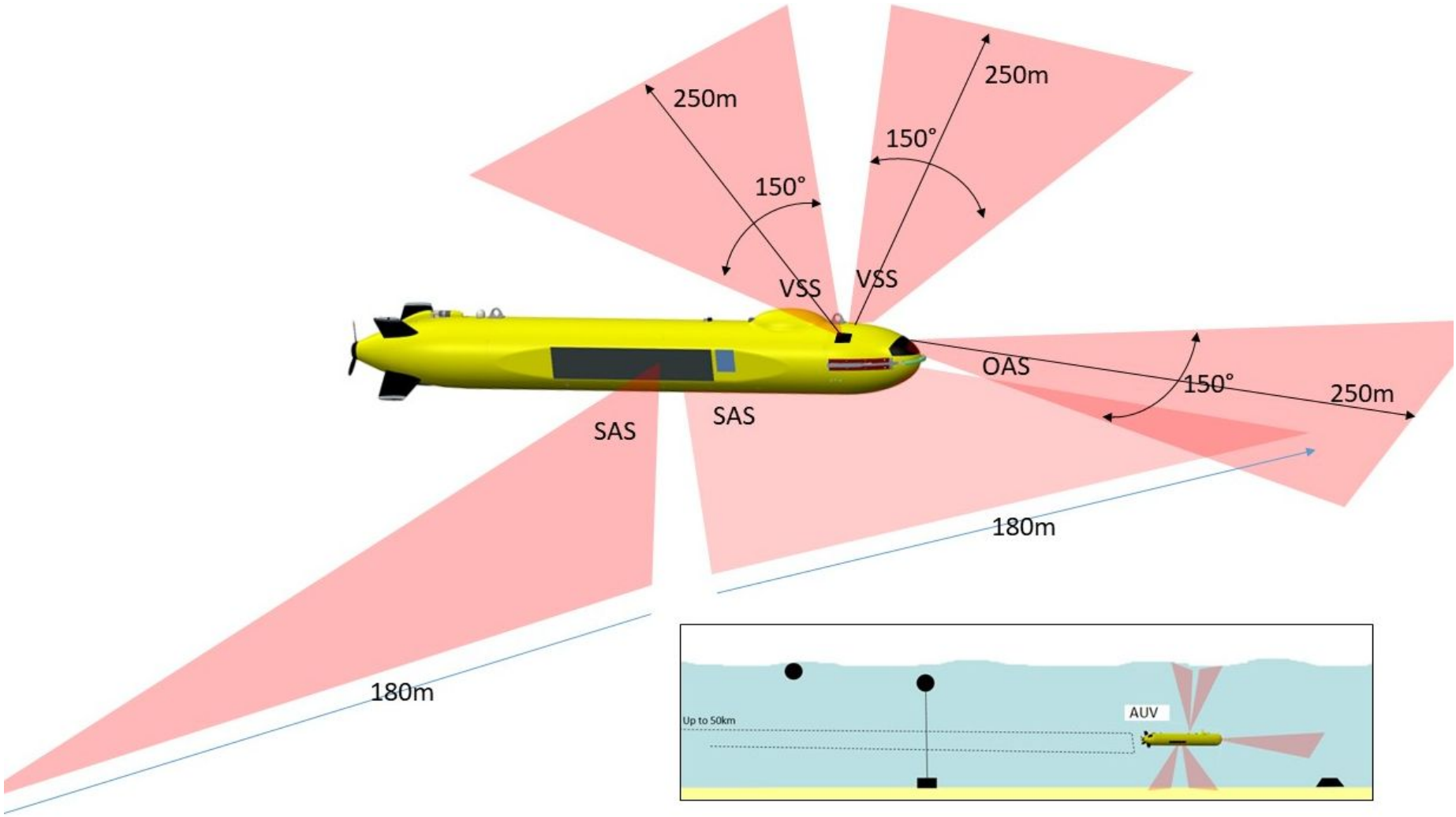
ALISTER-18 M



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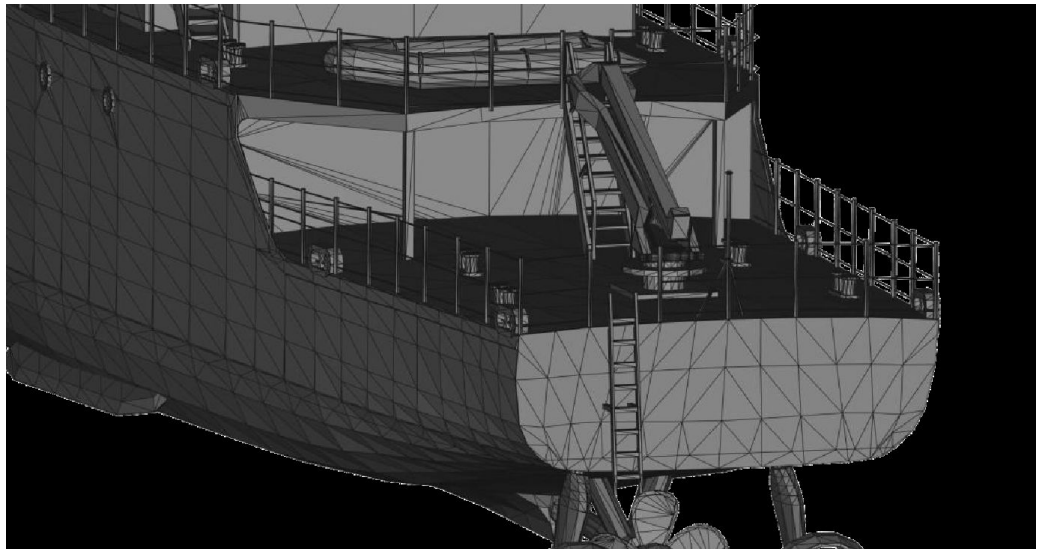
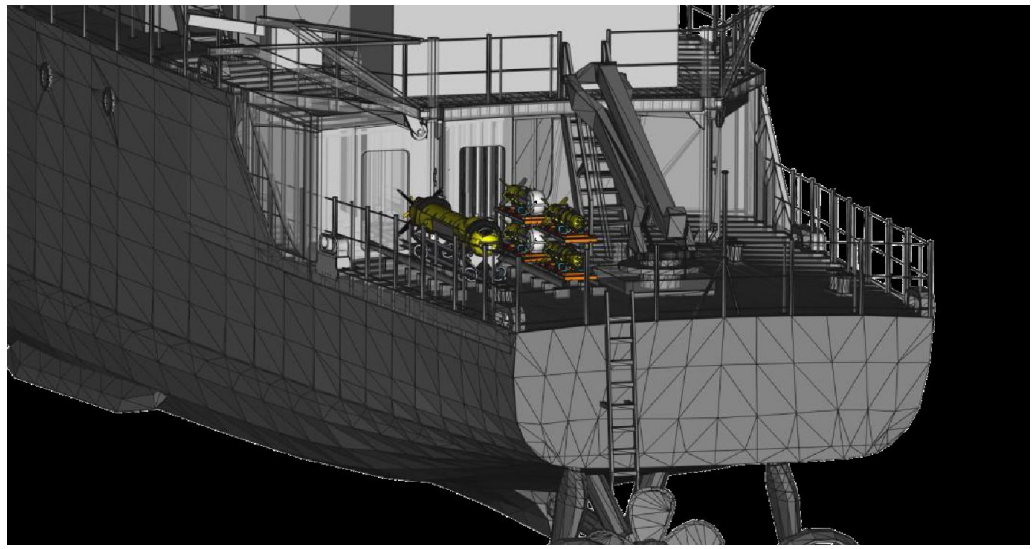
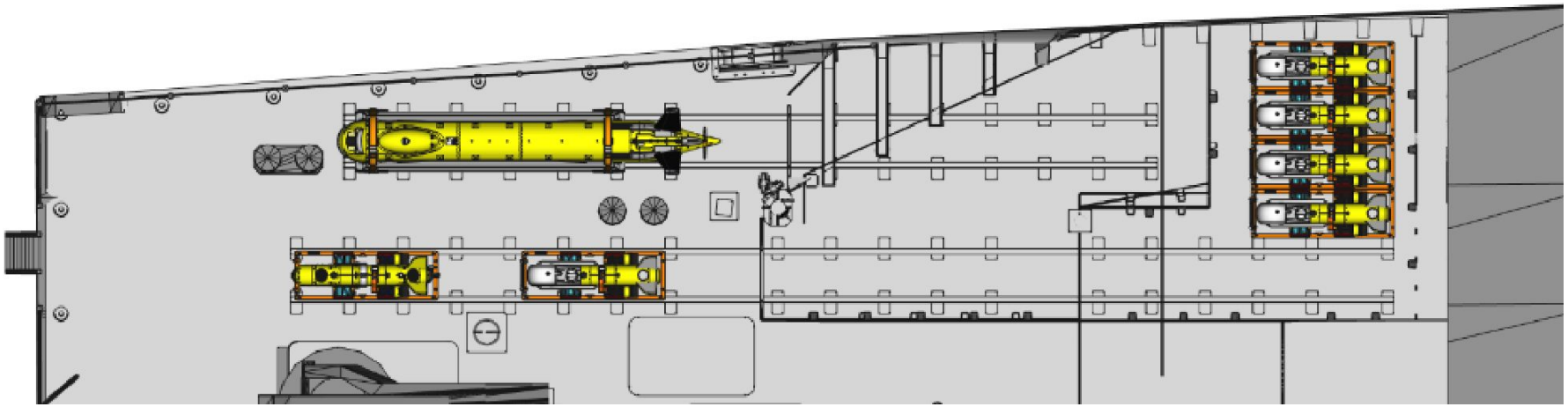
NEW DRONES ROOM (AUV AND K-STER)







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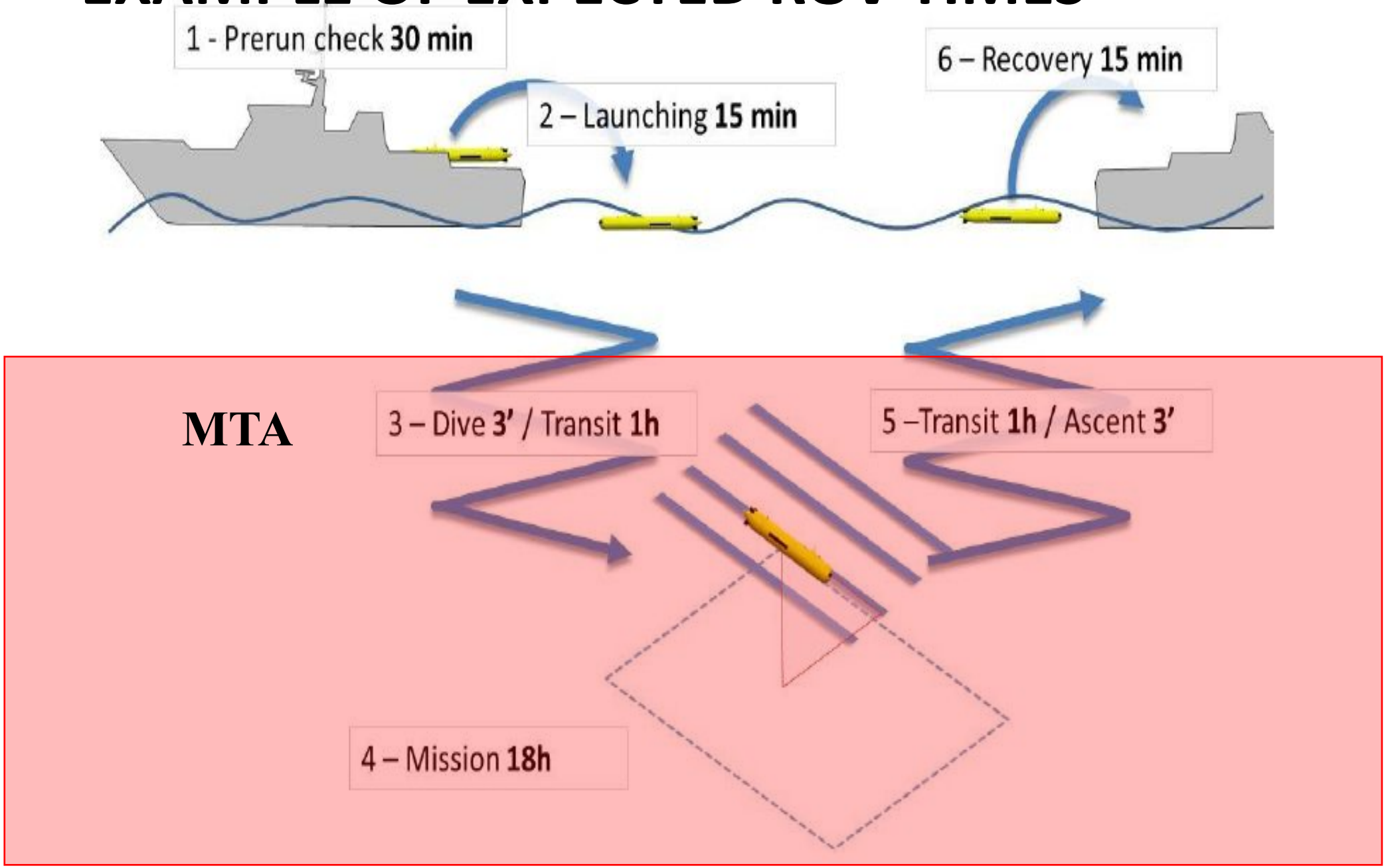
EXAMPLE OF EXPECTED ROV TIMES



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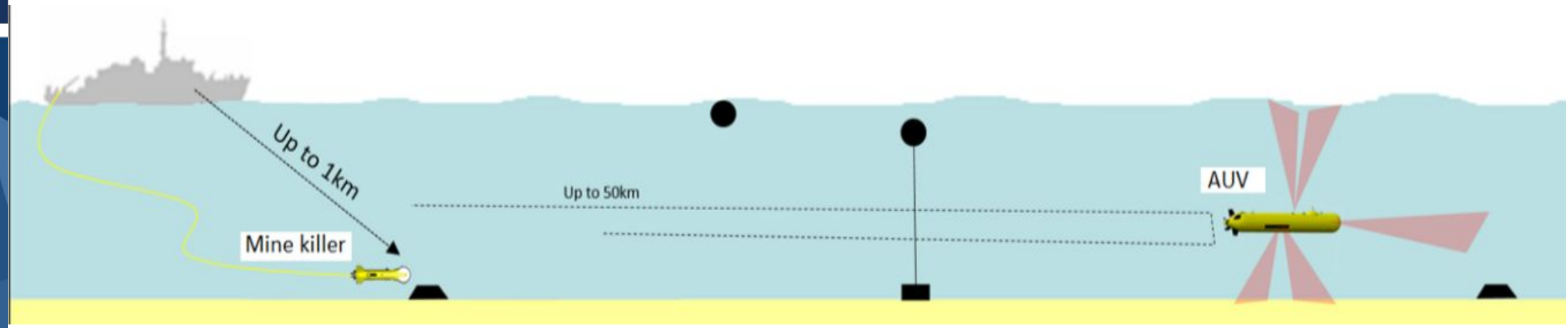
OPERATING DISTANCES



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MISSION ANALYSE AND COA INSIGHTS

- New capabilities to provide better results
- Due to improved technique more MILCO
- Reduced environmental impact
- Accuracy
- Reliability of previously acquire data under question mark
- Probably Re-inspection of previously inspected area is required
- High amount of MCM related data during MA time
- Choose the proper MCM assets and sensors
- MWDC as essential element in MCM C2 system
- Peace time MCM OPS (historical, ROUTE SURVEY)
- MWDC role in PMA
- Data sharing
- PMA on board and at the shore MWDC

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QUESTIONS