MARITIME RECONNAISSENCE AND SURVEILLANCE TECHNOLOGY

- THE PROGRAM OF THE ITN FOR THE NEW OPV
- THE ISR ROLE AND CAPABILITIES OF THE FUTURE PATTUGLIATORI POLIVALENTI D'ALTURA (PPA) OFFSHORE PATROL VESSELS (OPVs)
- EXPLORING THE FUTURE ISR NEEDS FOR THE ITALIAN NAVY

A LOOK AT THE ITALIAN NAVY'S SURFACE SHIP REQUIREMENTS AS A SEABORNE ISR PLATFORM

Roma, 16th February 2016

Admiral Antonio Natale
Chief of Naval Systems Dept at
Italian Navy General Staff

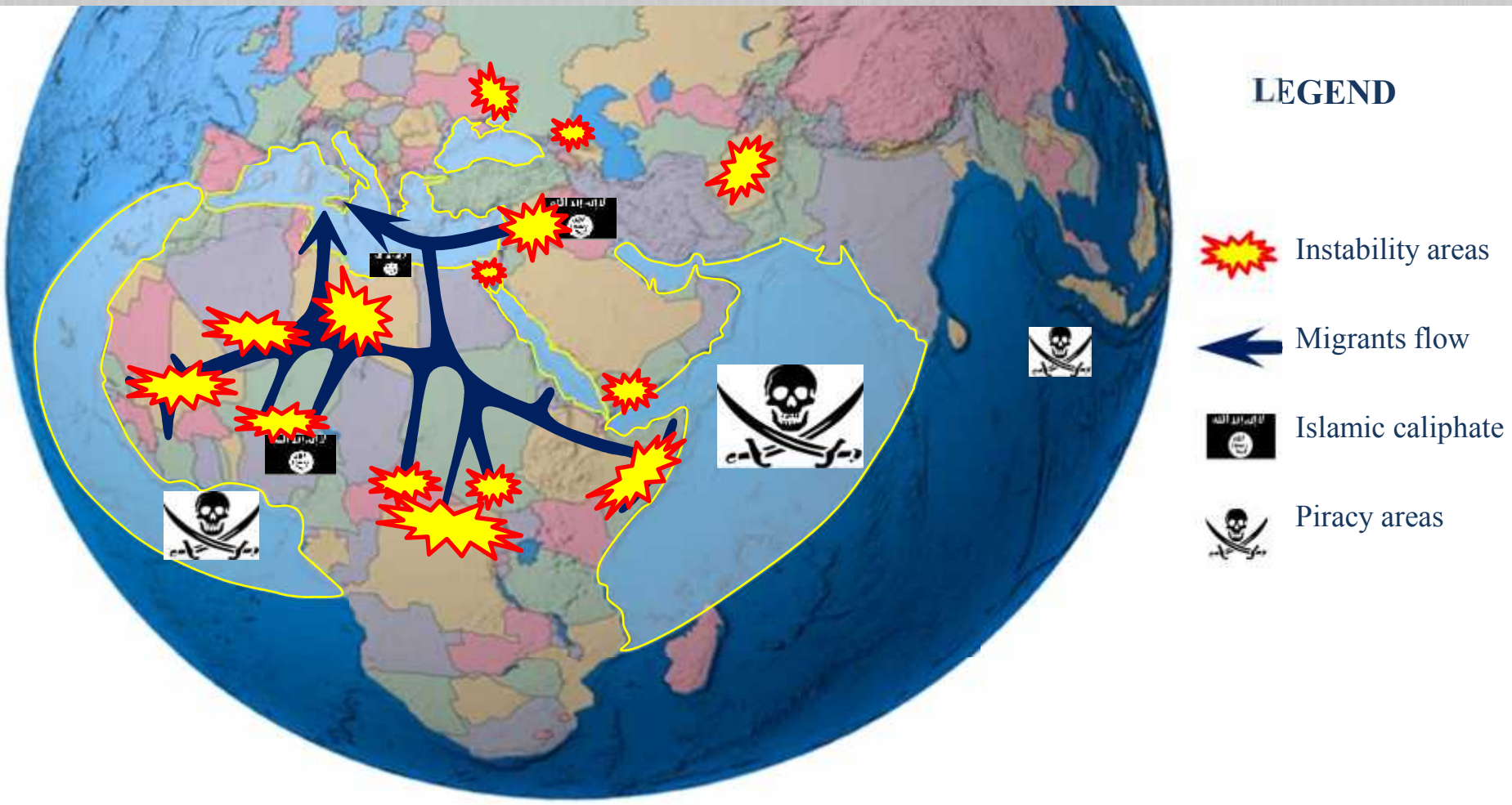
CENTRAL ROLE OF THE SEA

- THE CENTRE OF GRAVITY IS DRIFTING TOWARD THE SEA
- 90% OF THE TOTAL TRADE IS MARITIME
- 80% OF WORLD POPULATION LIVES WITHIN 200NM FROM COASTLINE
- 75% OF TRAFFIC PASSES THROUGH FEW, VULNERABLE CANALS AND INTERNATIONAL STRAITS
- DEMOGRAPHIC GROWTH, INTER AND INTRA RELIGIOUS AND ETHNIC CONFLICTS, CLIMATE CHANGES, DESERTIFICATION AND A GROWING DEMAND FOR WATER AND ENERGY ARE ORIGINATING AN EXTRAORDINARY TIDE OF SOCIAL AND POLITICAL UNREST

NATIONAL STRATEGIC AREAS OF INTEREST

THE MEDITERRANEAN DYNAMICS

- **GENERALISED INSTABILITY**
- **INCREASING FRICTION BETWEEN DIFFERENT COMMUNITIES**



ECONOMIC IMPORTANCE OF THE MEDITERRANEAN SEA

- 1% OF WORLD SEAS
  - 19% OF THE WORLDWIDE SHIPPING PASSES THROUGH
    - 30% OF WORLDWIDE CRUDE OIL PASSES THROUGH
      - 65% OF EU ENERGETIC RESOURCES

MARITIME SECURITY THREATS

CONVENTIONAL

SLOC

PIRACY

TERRORISM

ILLEGAL TRAFFICKING

ILLEGAL IMMIGRATION

WMD

POLLUTION

ITALIAN NAVY RECENT EXPERIENCES AS EXAMPLE

LESSON LEARNED

keep traditional capabilities and at the same time to make stronger non-traditional ones.

Flexibility

Modularity

Dual use

SHAPING FUTURE NAVIES

FLEXIBILITY IN NAVAL POWER

- **INNOVATIVE USE OF TRADITIONAL TOOLS**
- **DEVELOPMENT OF NEW PLATFORMS TO RESPOND TO THE OPERATIONAL NEEDS**

New Shipbuilding Program: Common Features

1. Dual use

2. Green Fleet

3. Modularity

4. Large Sanitary space

5. Elettric power and fresh water supplying for ashore villages (about 6000 people)

6. Flexibility

7. Growth margins

8. Extremely seaworthy

MULTIROLE OFFSHORE PATROL SHIP

DDG «De La Penne» Class

FFG «Soldati» Class

FSM «Minerva» Class

PSO «Comandanti» Class

PSO «Cassiopea» Class

«ONE SIZE FITS ALL»

MULTIROLE OFFSHORE PATROL SHIP
(PATTUGLIATORE POLIVALENTE D'ALTURA – PPA)

MULTIROLE OFFSHORE PATROL SHIP

MAIN CHARACTERISTICS

- DISPLACEMENT ≈ 4500 t
- LENGHT ≈ 129 m
- BEAM OVERALL ≈ 16 m
- COMBINED DIESEL, ELECTRIC & GAS
- SPEED ≈ 32 kts
- CREW 90
- ACCOMMODATIONS ≈ 200
- ENDURANCE 5.000 nmi - 15 kts
- ELECTRIC PROPULSION FOR LOW SPEED/PATROLLING (MAX 10 kts)
- HANGAR FOR NR. 2 SH90 OR NR.1 EH101
- LOW LIFE-CYCLE COST
- DUAL USE CONCEIVED SINCE THE DESIGN PHASE
- MARGIN FOR GROWTH
- MODULARITY OF PAYLOAD
- ENVIRONMENTALLY FRIEND (LOW POLLUTANT EMISSIONS)

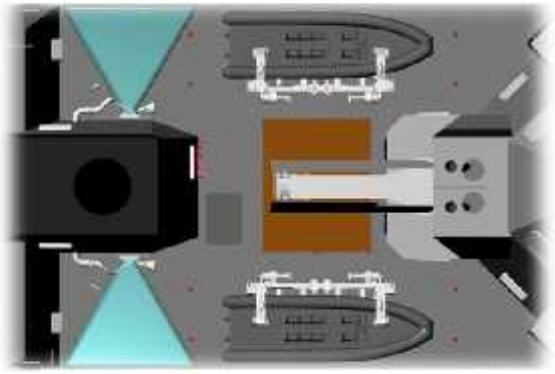
MULTIROLE OFFSHORE PATROL SHIP - MODULARITY

TWO FLEXIBLE MISSION AREAS

- ONE AMIDSHIPS ON THE MAIN DECK
- ONE ASTERN BELOW THE FLIGHT DECK

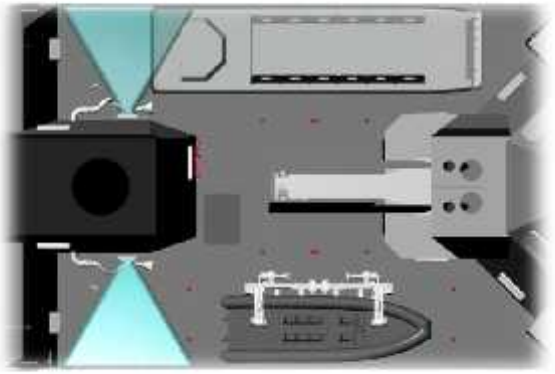
MULTIROLE OFFSHORE PATROL SHIP - MODULARITY

FLEXIBLE AMIDSHIPS MISSION AREA

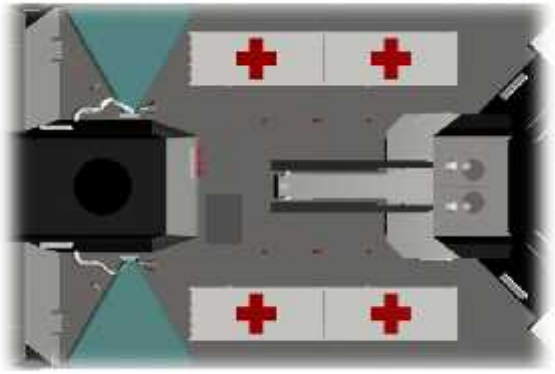


31” RHIBs & C4-ISR SHELTERS

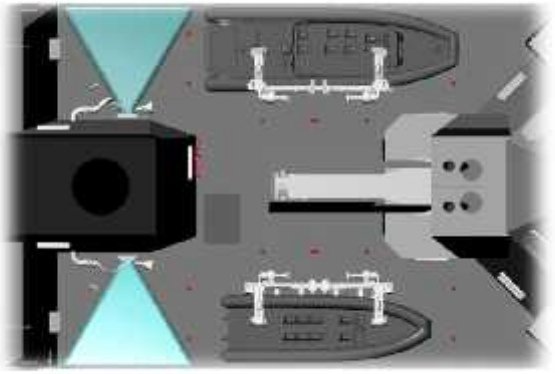
1 CRANE
20t@14m
+
3t LOGISTIC
ELEVATOR



31” RHIB & 50” LCVP



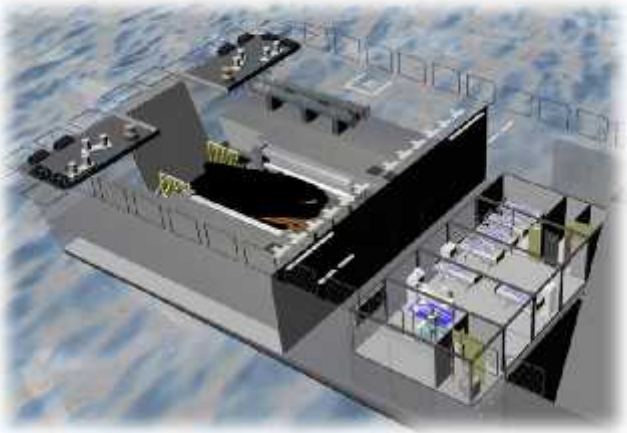
UP TO 8 ISO 20’ CONTAINERS



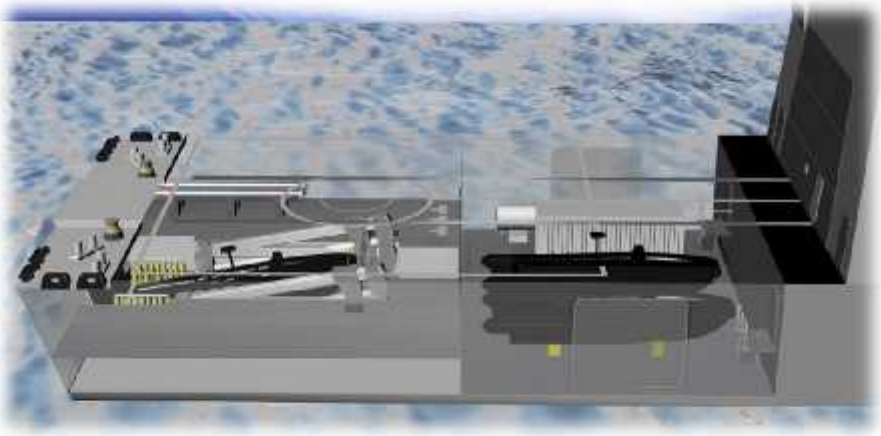
31” RHIB & 37” SPEC OPS BOAT

MULTIROLE OFFSHORE PATROL SHIP - FLEXIBILITY

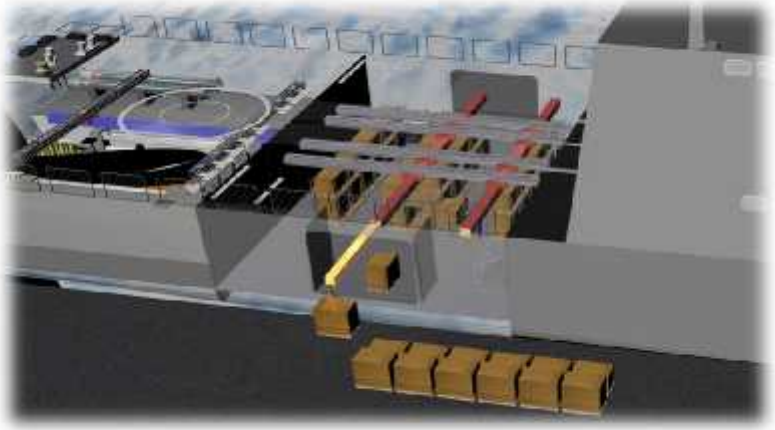
FLEXIBLE ASTERN MISSION AREA



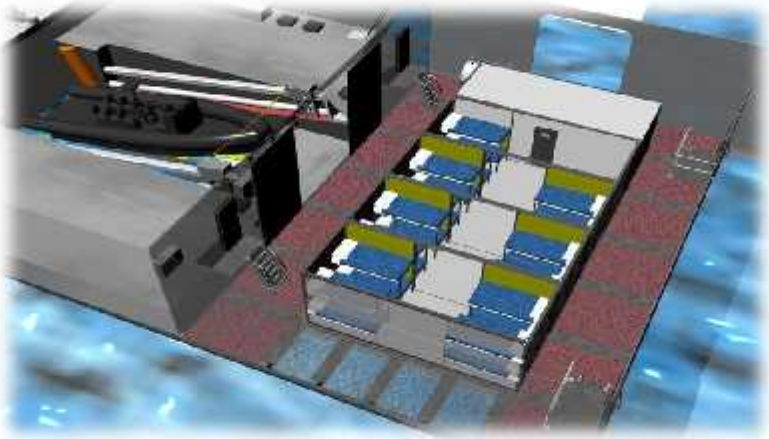
MEDICAL COMPOUND



SPEC OPS ASSETS

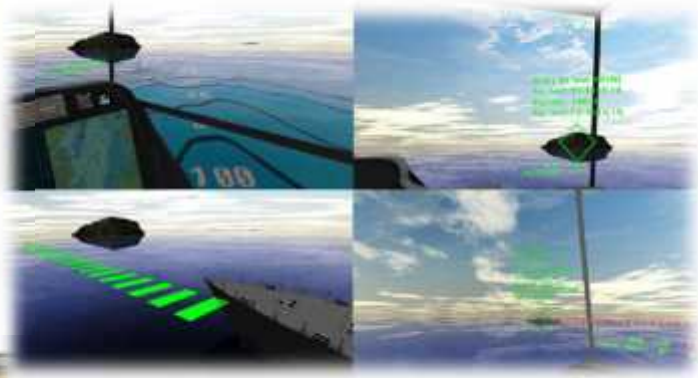


PALLETIZED STORE



BERTHING COMPOUND

MULTIROLE OFFSHORE PATROL SHIP – COCKPIT CONCEPT



MOCKUP IN PROGRESS

AERONAUTICAL-LIKE COCKPIT CONSOLLE

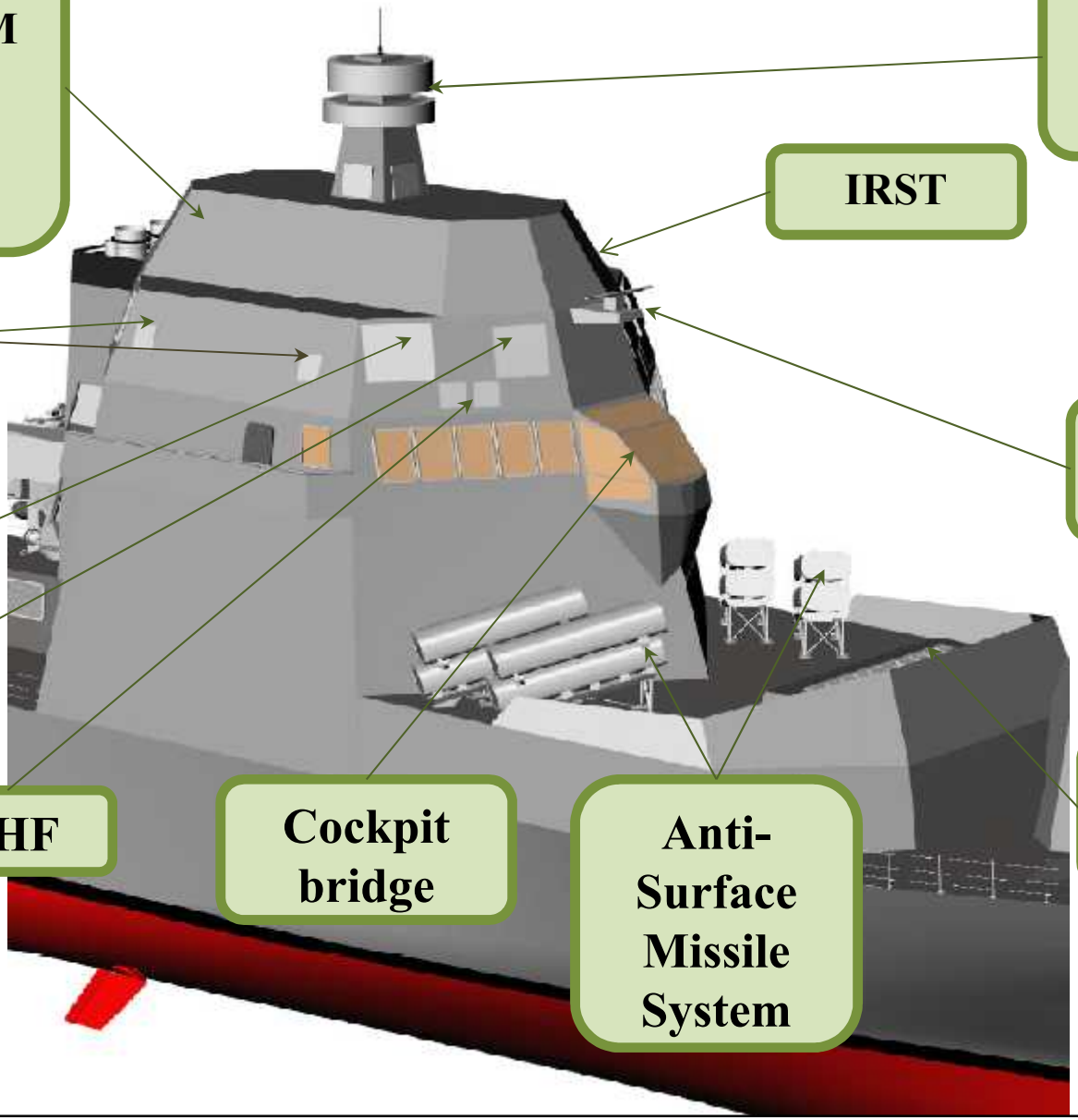
- NAVIGATION
- PLATFORM MANAGEMENT (PROPULSION/ELECTRIC GENERATION)
- SURVELLIANCE AND SELF-DEFENCE SYSTEMS MANAGEMENT

MULTIROLE OFFSHORE PATROL SHIP - Combat System

- 16 CELLS VLS FOR ASTER 15/30 AND GROWTH CAPABILITY FOR DEEP STRIKE (FULL COMBAT VERSION)
- 127/64 LCGS WITH VULCANO CONFIGURATION
- 76/62 MCGS WITH STRALES CONFIGURATION

- UP TO 8 TESEO S/S MISSILE SYSTEM (FULL COMBAT VERSION)
- LIGHT TORPEDO LAUNCHERS (FULL COMBAT VERSION)
- 2 MACHINE GUNS 25MM
- ODLS (OTO DECOY LAUNCHING SYSTEM): DECOY LAUNCHER AAW/ASW
- NEW RADARS X – C BAND AND GE SENSORS INTEGRATED IN SHIP SUPERSTRUCTURE
- IRST: INFRARED SEARCH and TRACK SYSTEM
- FLY DECK IS DESIGNED FOR NH90 / EH101
- PARKING HANGAR IS ABLE TO RECOVER 2 NH90 or 1 EH101

MULTIROLE OFFSHORE PATROL SHIP - Combat System



Dual band SATCOM
Tri band SATCOM
Sat TV
(inside Radom)

RESM
CESM
IFF

IRST

RECM

NAVR
(X/Ka)

Dual Band
Radar
(X/C)

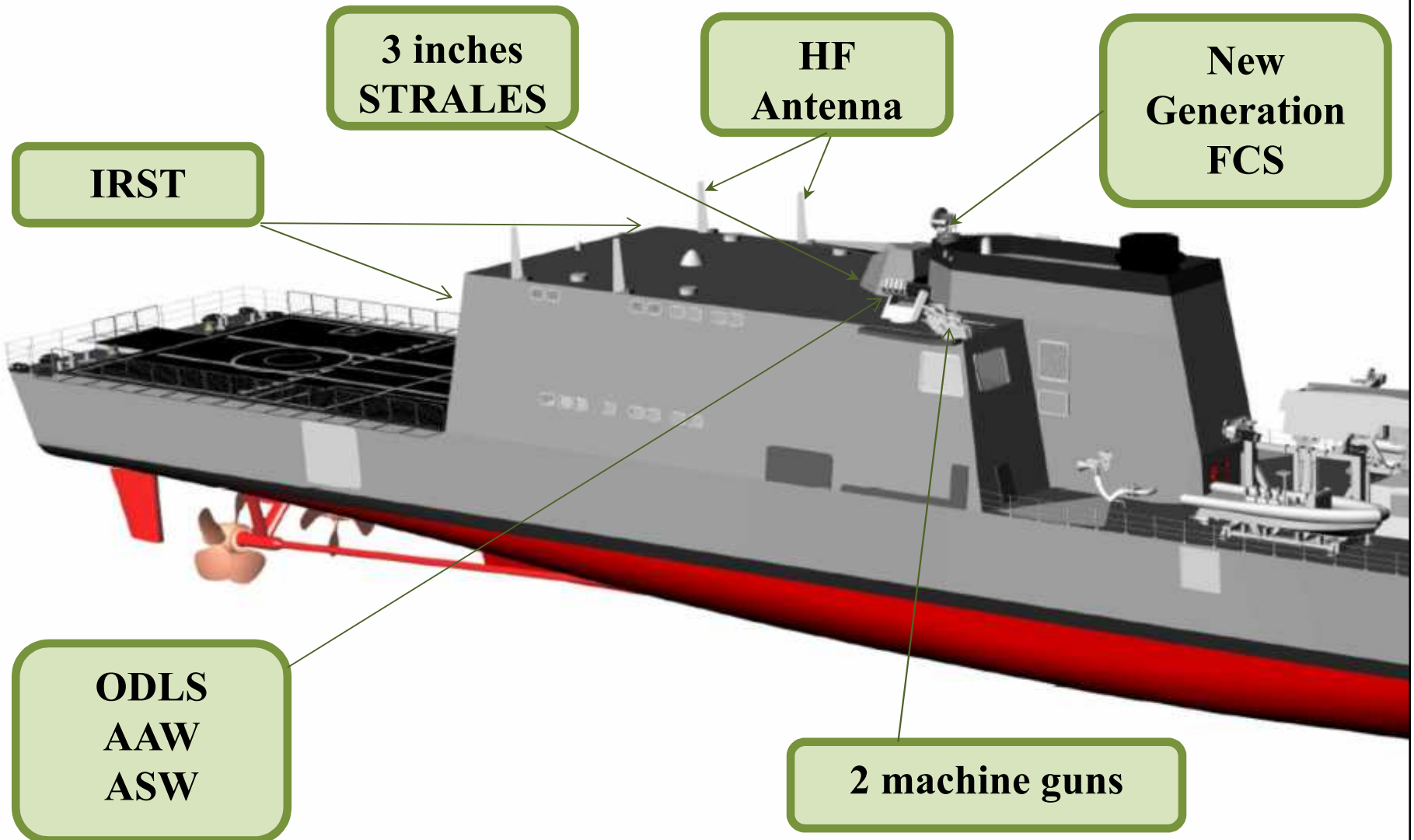
UHF

Cockpit
bridge

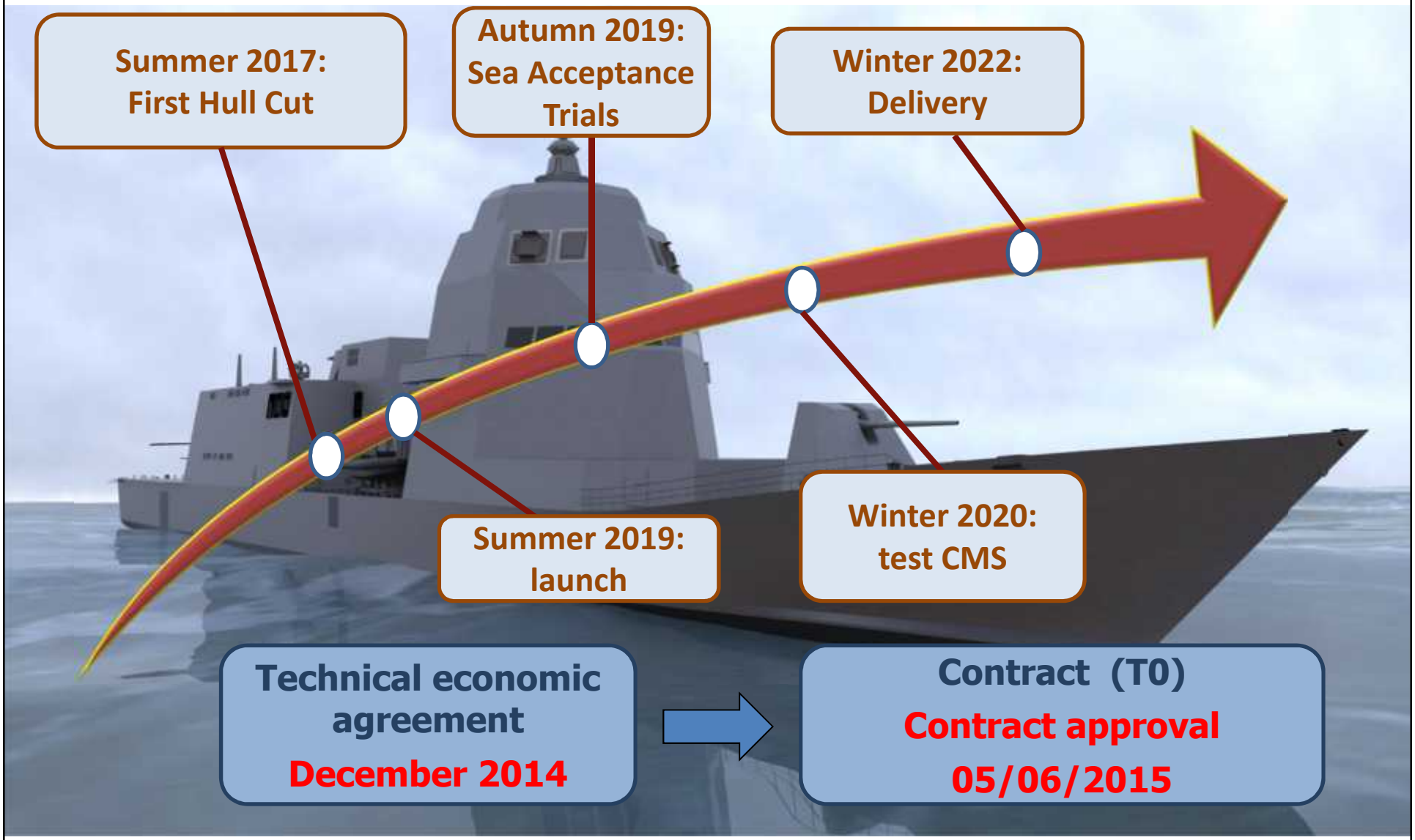
Anti-
Surface
Missile
System

SAAM
ESD

MULTIROLE OFFSHORE PATROL SHIP – Combat System



MULTIROLE OFFSHORE PATROL SHIP - Planning

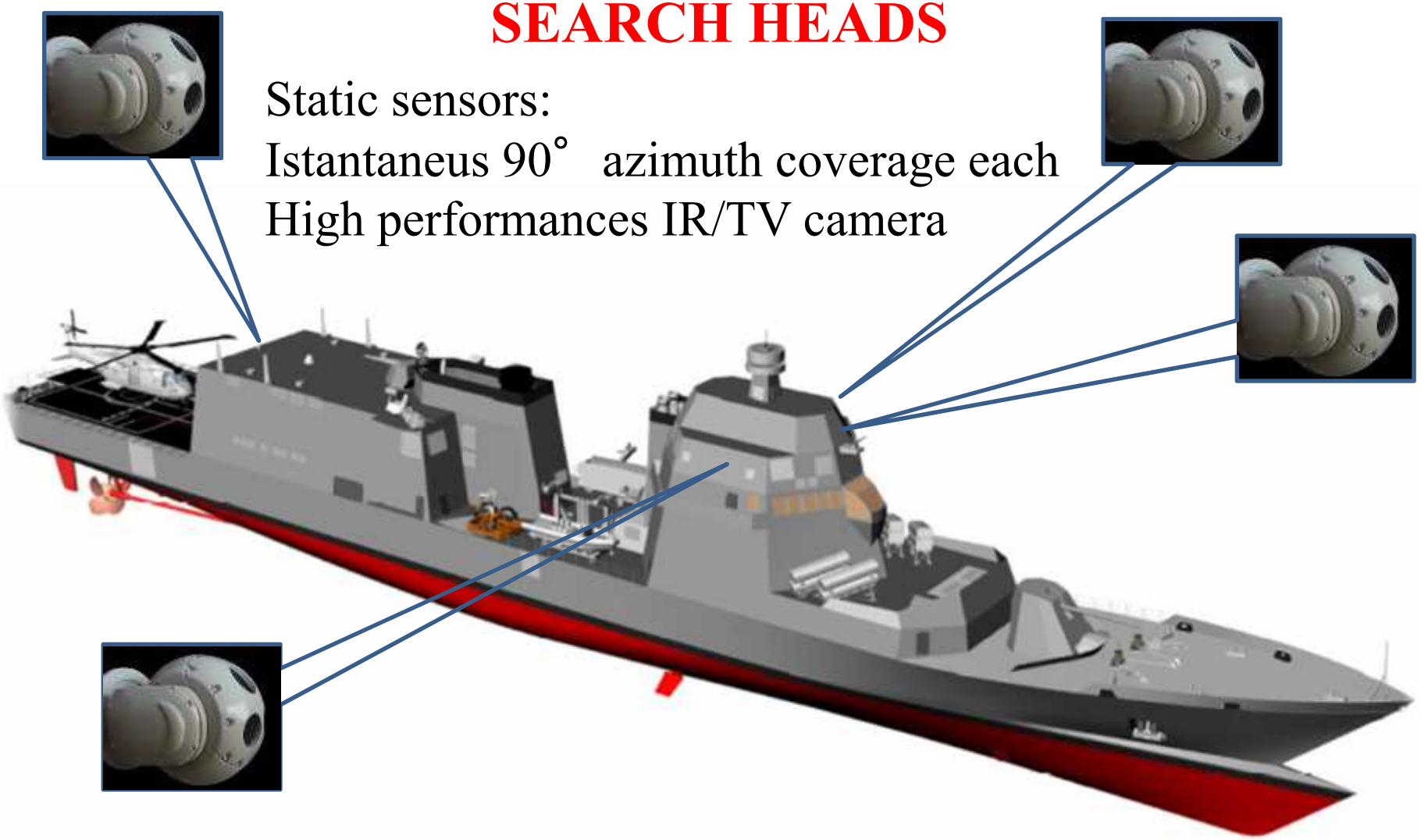


THE ISR ROLE AND CAPABILITIES OF THE FUTURE PATTUGLIATORI POLIVALENTI D'ALTURA (PPA) OFFSHORE PATROL VESSELS (OPVs)

DISTRIBUTED STATIC STARING IRST (DSS-IRST)

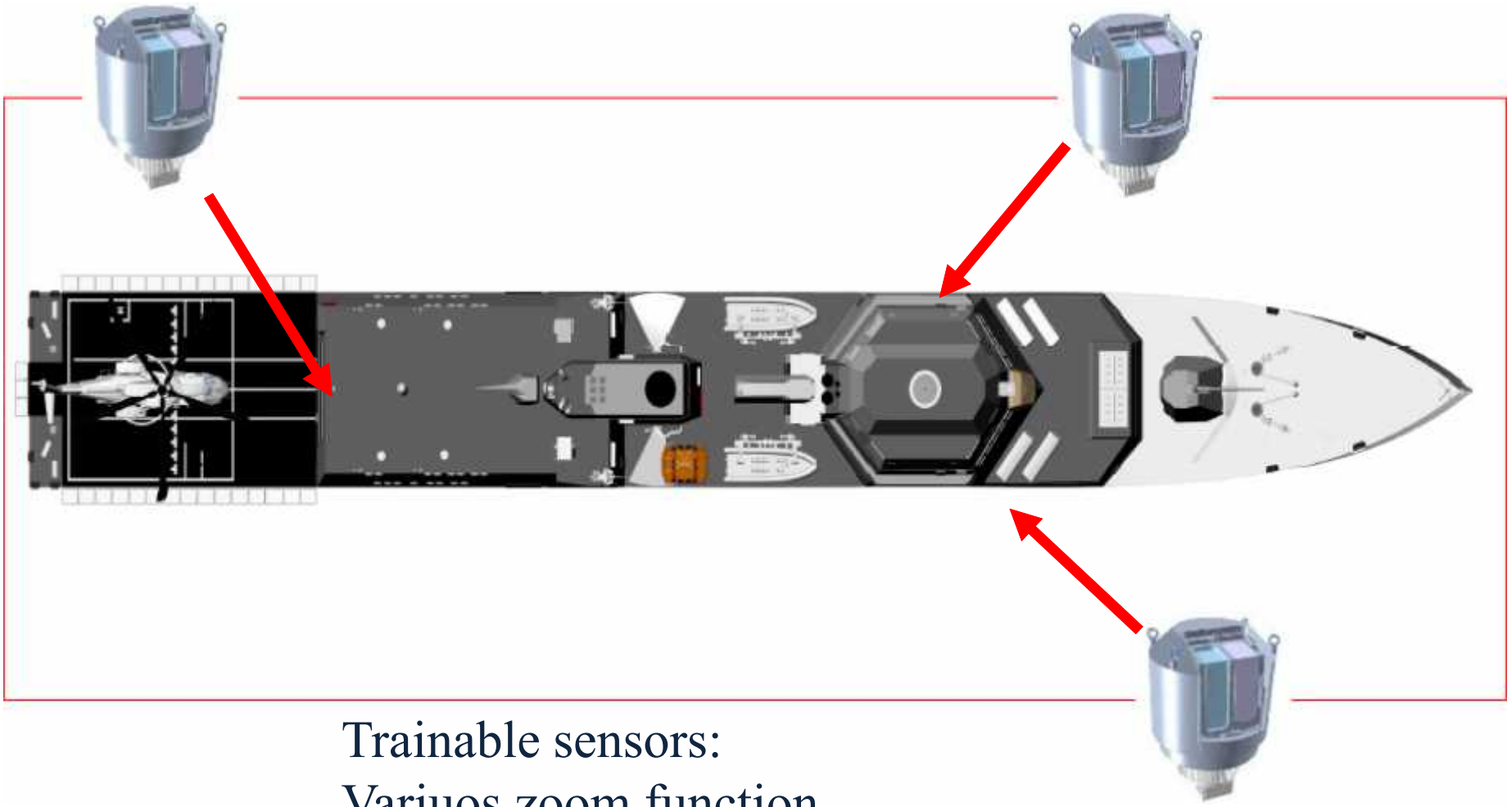
SEARCH HEADS

Static sensors:
Istantaneus 90° azimuth coverage each
High performances IR/TV camera



DISTRIBUTED STATIC STARING IRST (DSS-IRST)

DETECTION HEADS



Trainable sensors:
Variuos zoom function
High performances IR/TV cameras

DISTRIBUTED STATIC STARING IRST (DSS-IRST)

PANORAMIC VIEW

SEARCH HEAD

DETECTION HEAD

ISR CAPABILITIES OF THE FUTURE PATTUGLIATORI POLIVALENTI D'ALTURA (PPA) OFFSHORE PATROL VESSELS (OPVs)

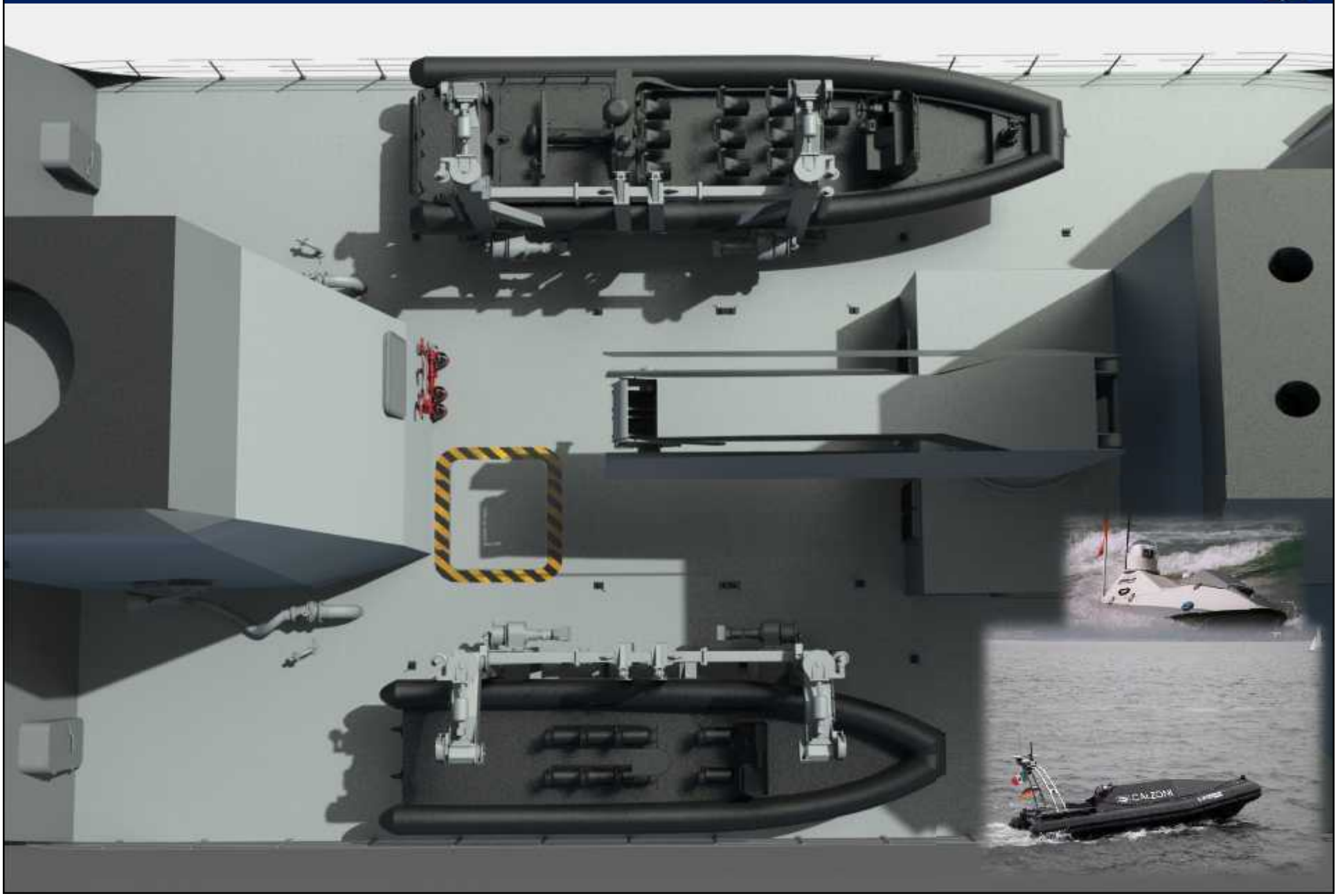
- New EW suite with enanched performances and technical issues:
  - High level of integration among all components (Radar, comms, contermeasures)
  - high automatation;
  - fast and very accurate measurement and reactions
  - New functions (e.g. Specific Emitter identification, ELINT/COMINT)
  - capabilitity to create and manage remote sensors (onboard other ships or UAV or others)
- New InfraRed sensors suite able to automatic search and track any target of interests
- High integration of all sensors components into the new Combat management System.
- High COMMS capabilities

Embarked Unmanned Aerial Systems (UAS)

Payloads avaiable:
Electro-optical/Infrared
Comms Relay
Radar
ESM
AIS
IFF
LD

Increase Ship Situational Awareness and I.S.R. capabilities

USV (Unmanned Surface Vehicle)



CONCLUSIONS 1/2

- THE SEA PLAYS A KEY ROLE FOR OUR SOCIETIES
- PRESENCE OF CONVENTIONAL THREATS IS INCREASING

- INTERNATIONAL SITUATION IS CHARACTERIZED BY UNPREDICTABILITY

CONCLUSIONS 2/2

CONSTABULARY ROLES REMAIN HIGH IN THE OPERATIONAL AGENDA OF THE NAVIES

COLLECTING INFORMATION AND EVIDENCES IN INTERNATIONAL ENVIRONMENT

- GEOREFERENCED AND DATED INFORMATION
- NEED TO SHARE INFORMATION AND EVIDENCES WITH MILITARY AND NON-MILITALY ACTORS
- DATABASES CREATING

MARITIME RECONNAISSENCE AND SURVEILLANCE TECHNOLOGY

QUESTIONS

Roma, 16th February 2016

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Chief of Naval Systems Dept at
Italian Navy General Staff