



Materiel and IT Command
Ministry of Defence

Dutch Naval Projects

Present and future projects

Innovative naval designs

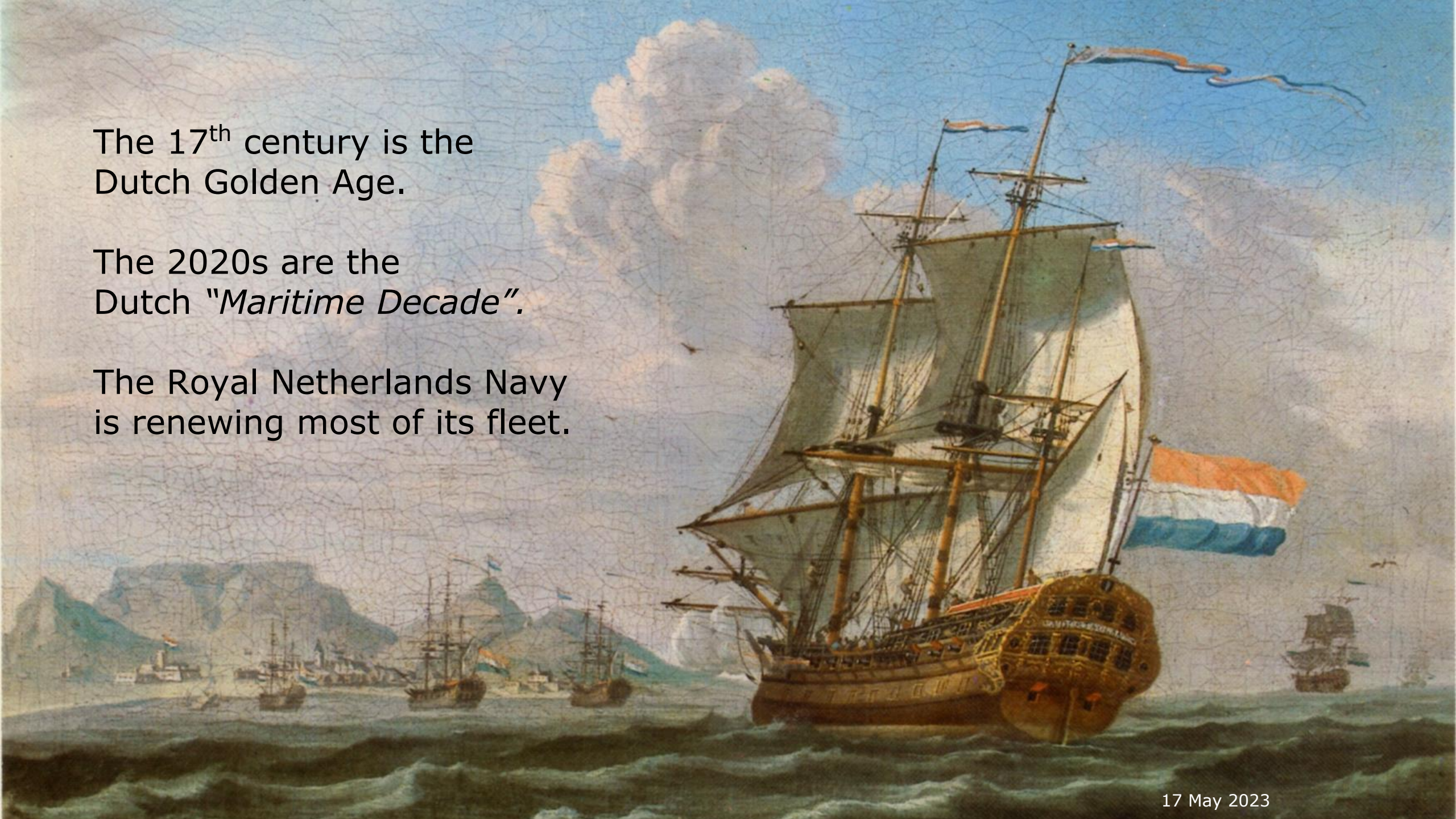
COMMIT
Projects
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Head of Maritime Projects

20 May 2023

The 17th century is the
Dutch Golden Age.

The 2020s are the
Dutch "*Maritime Decade*".

The Royal Netherlands Navy
is renewing most of its fleet.






Renewal of the Dutch Navy fleet

Combat Support Ship (1)

MCM vessels (6+6 )

ASW frigates (2+2 )

Submarines (4)

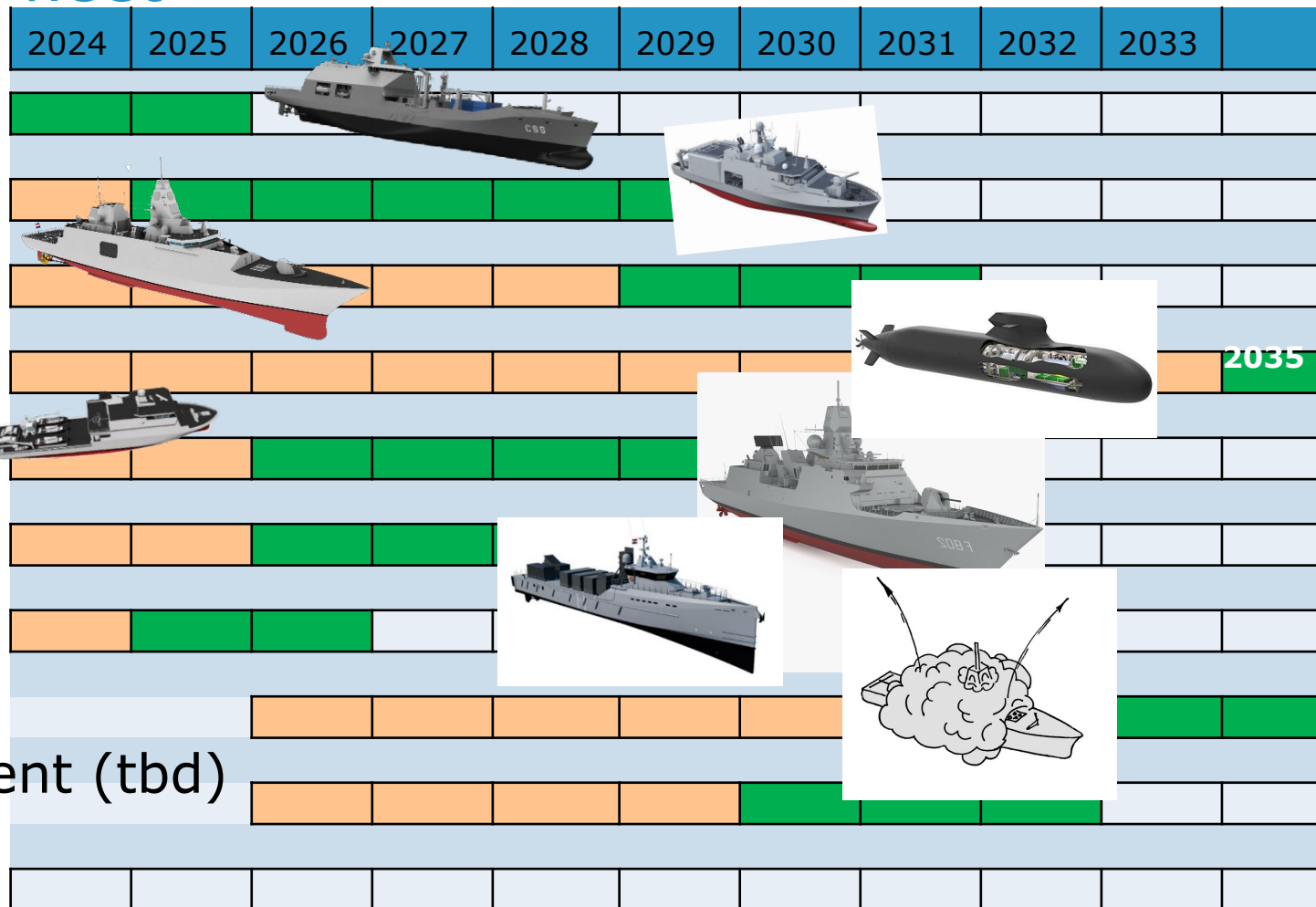
Auxiliary Vessels (8)

ADCF upgrade (4)

Low-manned Surface Vessels

Future Air Defender (4)

LPD and Patrol Vessel replacement (tbd)



COMMIT



Combat Support Ship

Built by DSNS

IOC 2024

Innovation:

- Engines; low emission & consumption
- Low consumption by hull & propellers
- Durable paint
- Cyber protection
- VR training



Combat Support Ship

Primary Functions

Maritime and Amphibious Task Group
Replenishment (Solids and Liquids)
Role 2 Medical Support

Classification

DNVGL +1A Naval Support (RADHAZ) E0
RP (3, 50%) DPS (1) TMON (Open loop water)
Crane NAUT (OC) NBC (2) HELDK (S, H, F)
COMF (V3, C3) BWM (T) BIS

Dimensions

Length o.a. (approx.)	179.3 m
Beam mld.	26.4 m
Draught (design)	8.3 m
Depth to Helicopter Deck	15.8 m
Displacement (approx.)	22300 ton

Performance

Speed (service)	18+ knots
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Propulsion

Propulsion System	Diesel Electric, Twin Shafts
Propulsion Motors	2 x 7900 kWm
Diesel Generators	4 x 4880 kW @ 720 rpm
Propellers	2 x FPP Ø5.4 m
Bow Thrusters	2 x FPP
Stern Thrusters	2 x FPP

Crew

Accommodation 75 Crew + 85 Special Personnel

Equipment

2 x RAS Masts Liquid and Solid capable
2 x Cargo Cranes 40 tonnes @ 12m
1 x Stores Crane 1.5 tonnes @ 12m
2 x Ammunition Elevators
2 x Fast RHIB

Nautical Equipment

Navigational Equipment, GMDSS A4, Navigation
Radars (X-band, S-band), Echo Sounder, Speed Log,
Voyage Data Recorder, Time System, Power and
Ship's Management System with ECDIS

Transport capacities

Flight Deck Landing Spot	1 x NH90 or 1 x EH101
Hangar	2 x NH90 (Rotor Blades folded) or 1 x NH90 Rotor spreaded
Container Capacity	20 TEU
Ammunition Storage	Protected Cargo Holds
Tank capacity	
Total Liquid Capacity	8600 m ³

Military Design Features

URN Reduction, Shock Protection, Blast Protection,
Vulnerability Reduction Measures, Ballistic
Protection, ILS Package



MCMV

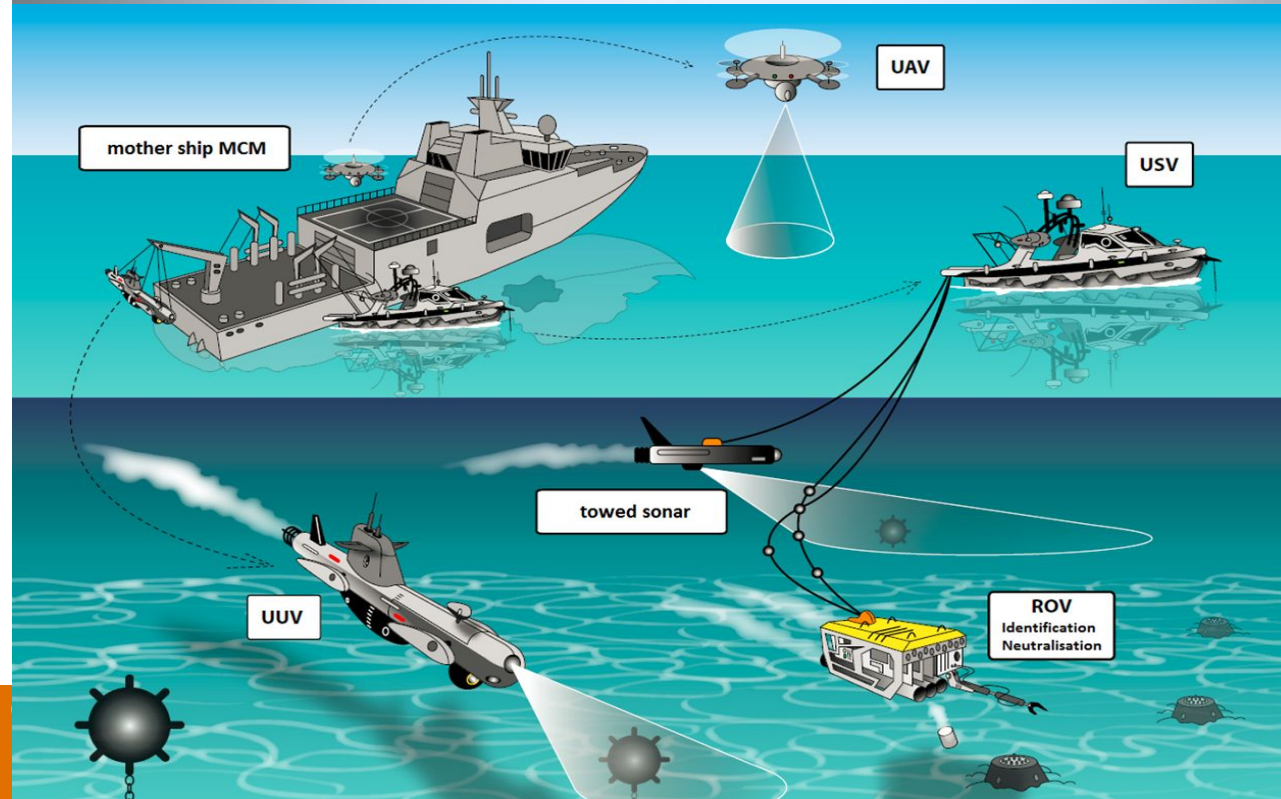
BEL/NLD

6 + 6 each

FRA

Mothership +
MCM Toolbox:

- Unmanned underwater vehicle
- USV
- UAV



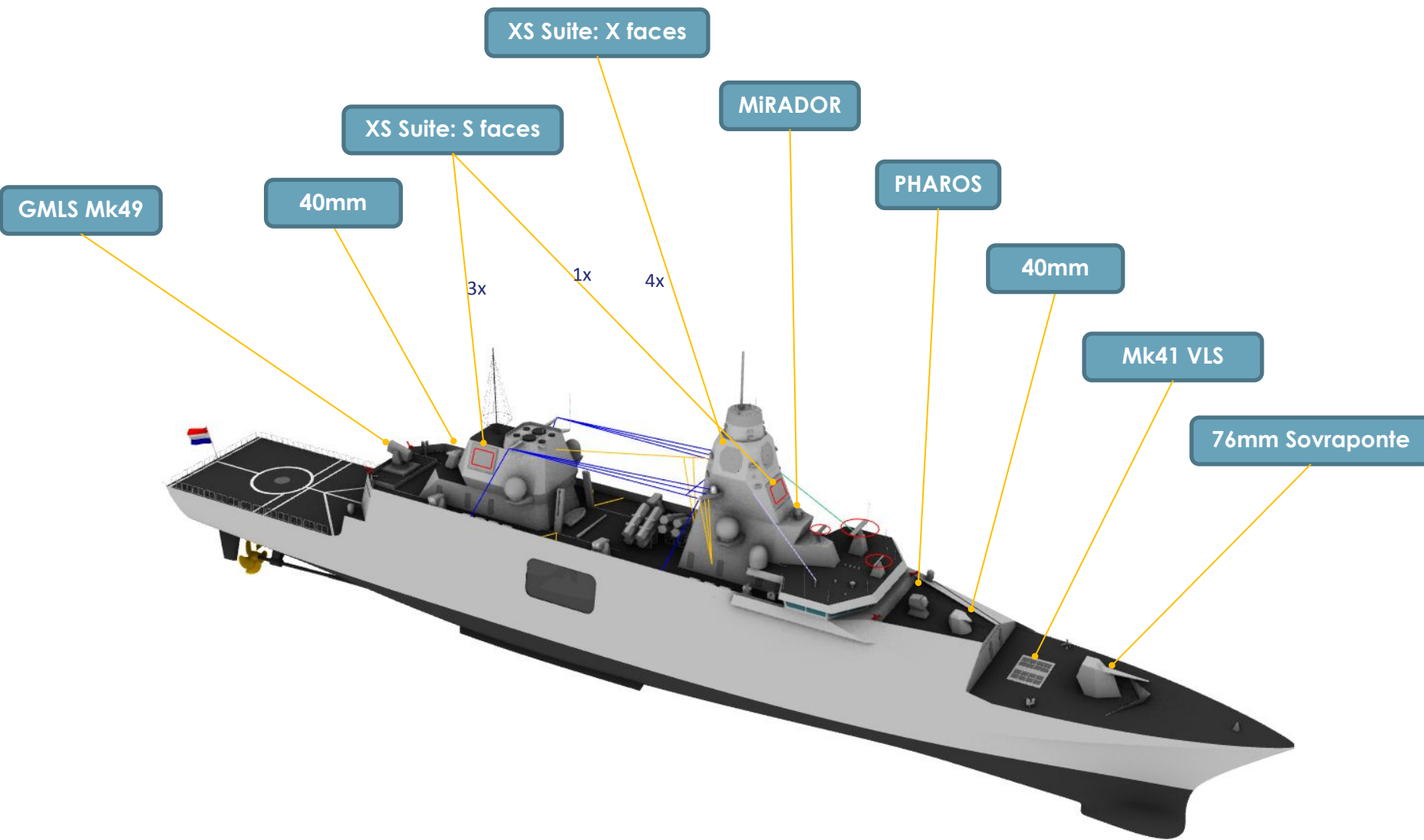


ASW Frigates

- NLD (2)/BEL (2)
- Thales NLD
AWW-FCS
- Thales NLD
X/S-band MFR
- TNO Underwater
Warfare Sensor
Suite (UWWSS)
- Torpedo Defence
System incl.
Anti-Torpedo Torpedo
- DC Power
distribution
- High Energy Laser (P.F.)



Above Water Warfare Suite ASW-frigate

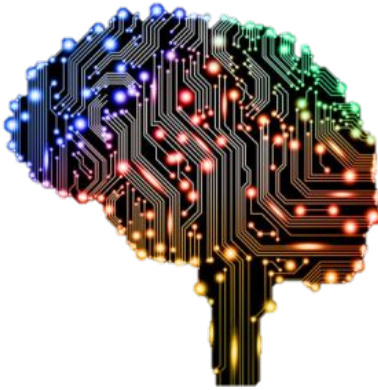


Fire Control System

From: fixed choices in weapon assignment



To: a flexible reasoning system



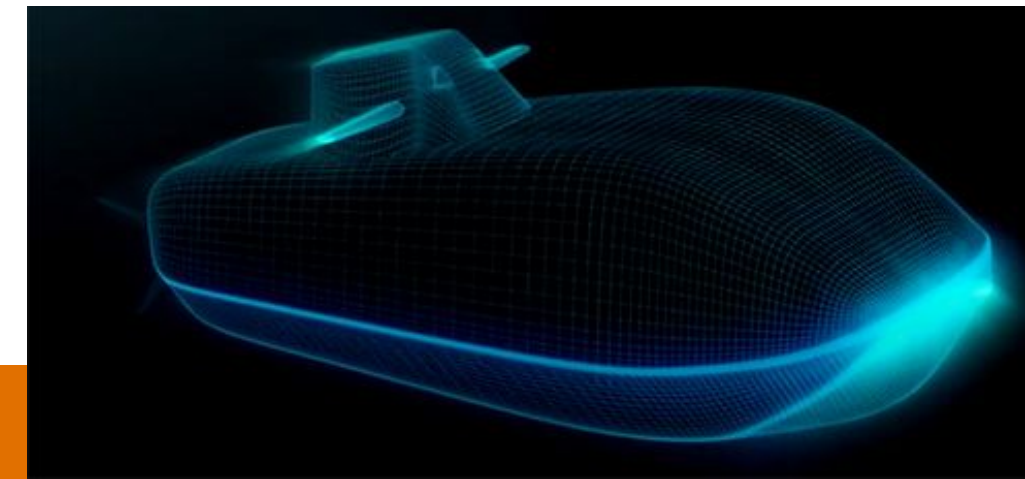
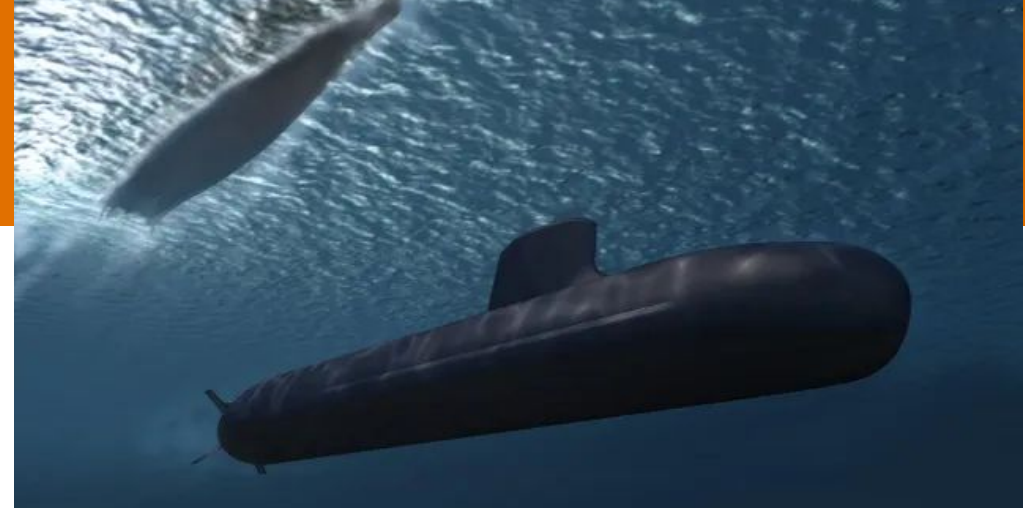


Submarines

4 boats to replace WALRUS class (conventional)

RFQ to 3 ship yards

First boat 2034





Auxiliary Vessels

- 4 + 4
- Low emission propulsion (dual fuel / green methanol)
- Multi-purpose:
 - *Hydrographic survey*
 - *Submarine support*
 - *Training*
 - *Caribbean support*
 - *Diving support*





ADCF upgrade

- End-of-life operational upkeep
- Mk54 torpedo
- ESSM bl 2
- 127 mm gun (PGM)
- New CIWS (RAM)
- ESM/ECM
- Naval Strike Missile
- Tomahawk bl V



GUN 127 MM

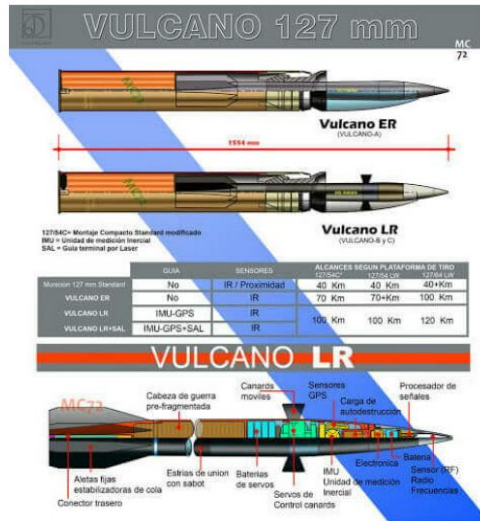


CIWS



Leonardo 127/64 LW-kanon. (Foto: Leonardo)

GUN
(Leonardo)
for ADCF &
FuAD

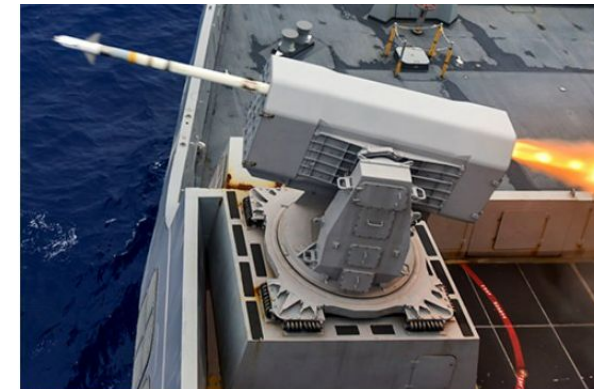


vCIWS
1.GUN (Leonardo) 2. Rolling Airframe Missile (RAM) (RAMsys) 3. Pharos-radar (Thales) 4. FC integration (Thales)



DART. (Foto: Leonardo)

PHAROS
Multi Target Tracking with Guided Ammunition Control



RAM. (Foto: Duitse marine)



Kongsberg: Naval Strike Missile





MBMD SMART-L EARLY WARNING CAPABILITY

- Project with THALES
- New BMD capacity
- Proof of the pudding:
TRMP at Formidable Shield 23



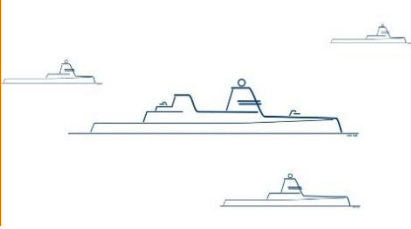


Future Air Defender

- 4 units
- Replacement of 4 ADCF
- IOC 2033-2035



- Priorities tasks RNLN:
 - Integrated Air & Missile Defence for Force Defence
 - Maritime Strike
 - Ballistic Missile Defence for (NATO) territory



Concept Future Air Defender (FuAD)

- Endo-atmospheric Ballistic Missile Defence interceptor (SM-6 ?)
- SM-2 block IIIA replacement
- Thales NLD developed L/S/X-band multifunction radar
- Develop chains (sensor – fire control – effector) against:
 - Air Breathers
 - Hypersonics
 - UAV's
 - Loitering munition
 - Rockets Artillery Mortar
 - Anti-ship ballistic missiles
 - Ballistic missiles against (NATO) territory





NATO Maritime Strike Long Range

Tomahawk for:

- ADCF
- Current submarines
- Future Air Defender
- Future submarines





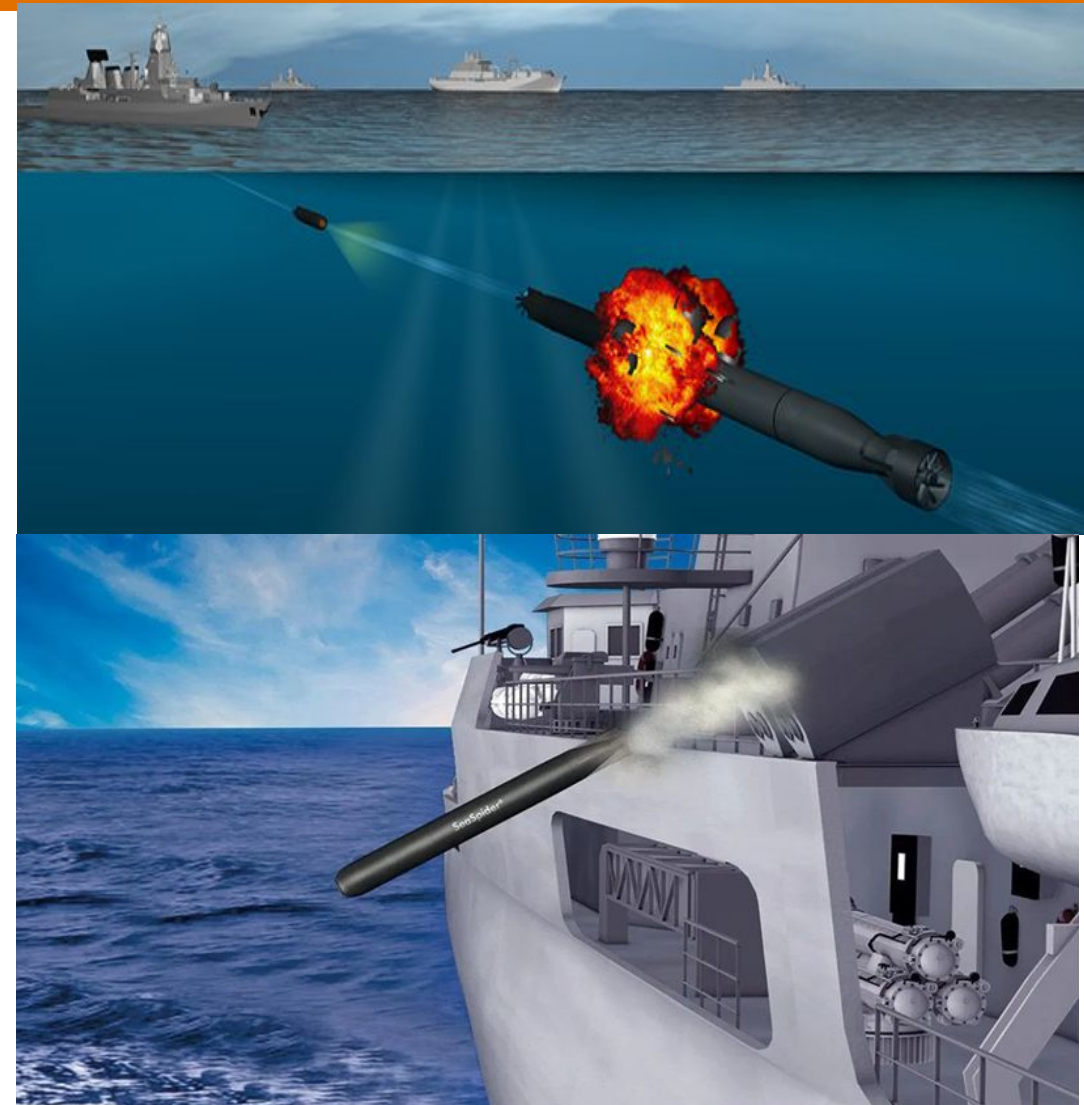
Torpedo Defence System

- Decoy launcher t.b.d.
- Towed Array sonar
- Anti-torpedo torpedo

NLD/GER research/prototype

Soft kill & hard kill

PESCO project

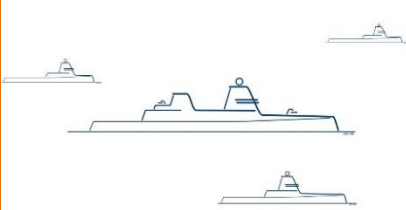


TRIFIC

Low-manned Surface Vessel:

- Rapid increased fire power
- Commercial vessel
- Containerized modular payload
- Remotely operated from frigate

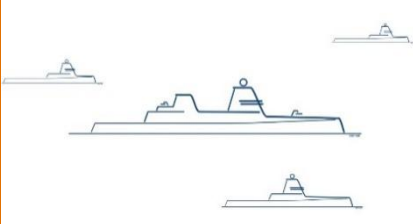




Accelerate IAMD and Strike capabilities using **low manned** surface vessels

- Rapid increase of IAMD and Strike capabilities using low manned surface vessels
- Direct increase of capabilities of:
 - Large surface combatants
- Adaptable in FUAD concept, supports transition to unmanned





MOTS modular payloads

- Modular payloads, continuous upgradable
- Containerized VLS with SAM
- Loitering munition
- Containerized ECM/ESM

- Extendable with:
 - Strike missiles
 - SSM
 - UW modules
 - Extra sensors





LPX

Replacement of LPD (amphib) & OPV (patrol/CG)

RNLMC: Future Force Design
(small/lean/fast/flexible/agile)





CHALLENGES

Lack of Capacity; internal: can we deliver?

Lack of Capacity; external: can suppliers deliver?

Solutions?

- COTS/MOTS
- Realistic requirements (aim for the highest)
- Modular
- International cooperation; GOV-GOV / Industrial – Industrial



Questions ?

