



Project Spartan

An Innovative Light
Frigate Design



Length overall 117 m

Length waterline 110 m

Beam waterline 17.5 m

Depth 10.75 m

Draught 3.9 m

*Displacement light
seagoing SOL* 2,964 te

*Displacement deep
EOL* 3,565 te

Max speed 26 kts

*Endurance
at 12 kts* 6000 nm

*Endurance
at 18 kts* 4500 nm

*Endurance
at 25 kts* 2000 nm

Propulsion system:

*2x MTU 16V 8000 @ 8 MW
CODLAD*

*4x MTU 12V 4000 Gen Sets @
1.34 MW*

2x 1.2MW motors

IMO Tier 3 compliant

Steller Systems has developed an innovative design for a configurable, modular, survivable, affordable and exportable ship that will meet current and future requirements for a General Purpose Frigate.

Our innovative solution includes a reconfigurable aft mission space with ramp access to embark Unmanned Vehicles (UXVs), a large hangar space, sufficient power generation to accommodate systems growth over the next 30+ years, and configurable survivability designed in from the outset.





Designed for the export market

Steller Systems has worked closely with export customers to define the range of roles and high-level requirements for a light frigate. Engaging with potential operators early in the design process has enabled our team to produce a single solution that meets the most onerous requirements, but which can be scaled back to suit individual budgets.

The *Nodal Modular Physical Architecture* approach to the design allows for configurable options. Each node has the ability to accept different systems; for example a customer may wish to have a simple 30mm Small Calibre Gun system in place of the forward Mk41 Vertical Launch System (VLS), or place a SeaRAM or Phalanx in this position.

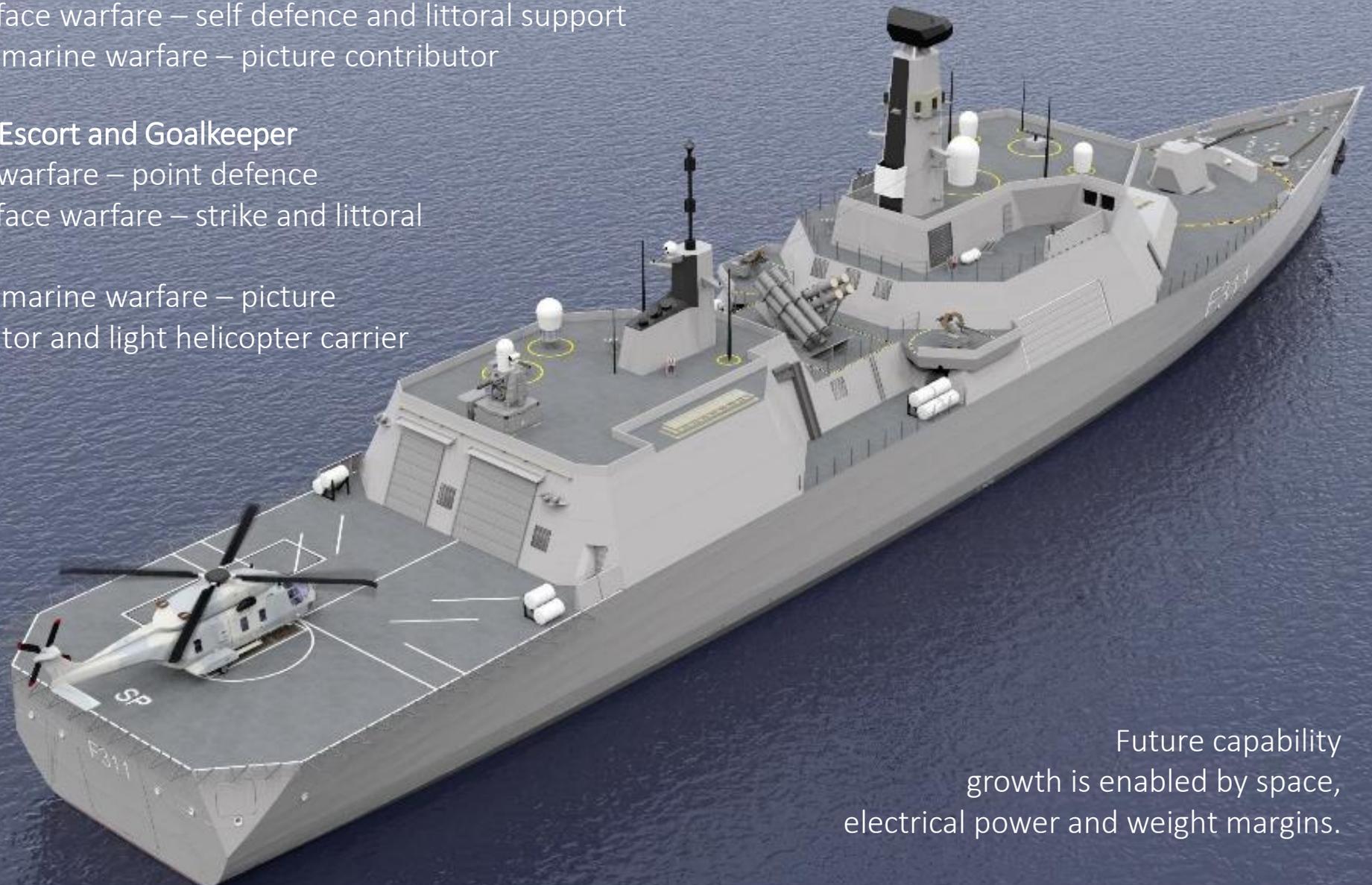
A flexible, adaptable multi-role platform

General Purpose Patrol Frigate

- Anti-air warfare – self-defence
- Anti-surface warfare – self defence and littoral support
- Anti-submarine warfare – picture contributor

Task Group Escort and Goalkeeper

- Anti-air warfare – point defence
- Anti-surface warfare – strike and littoral support
- Anti-submarine warfare – picture contributor and light helicopter carrier

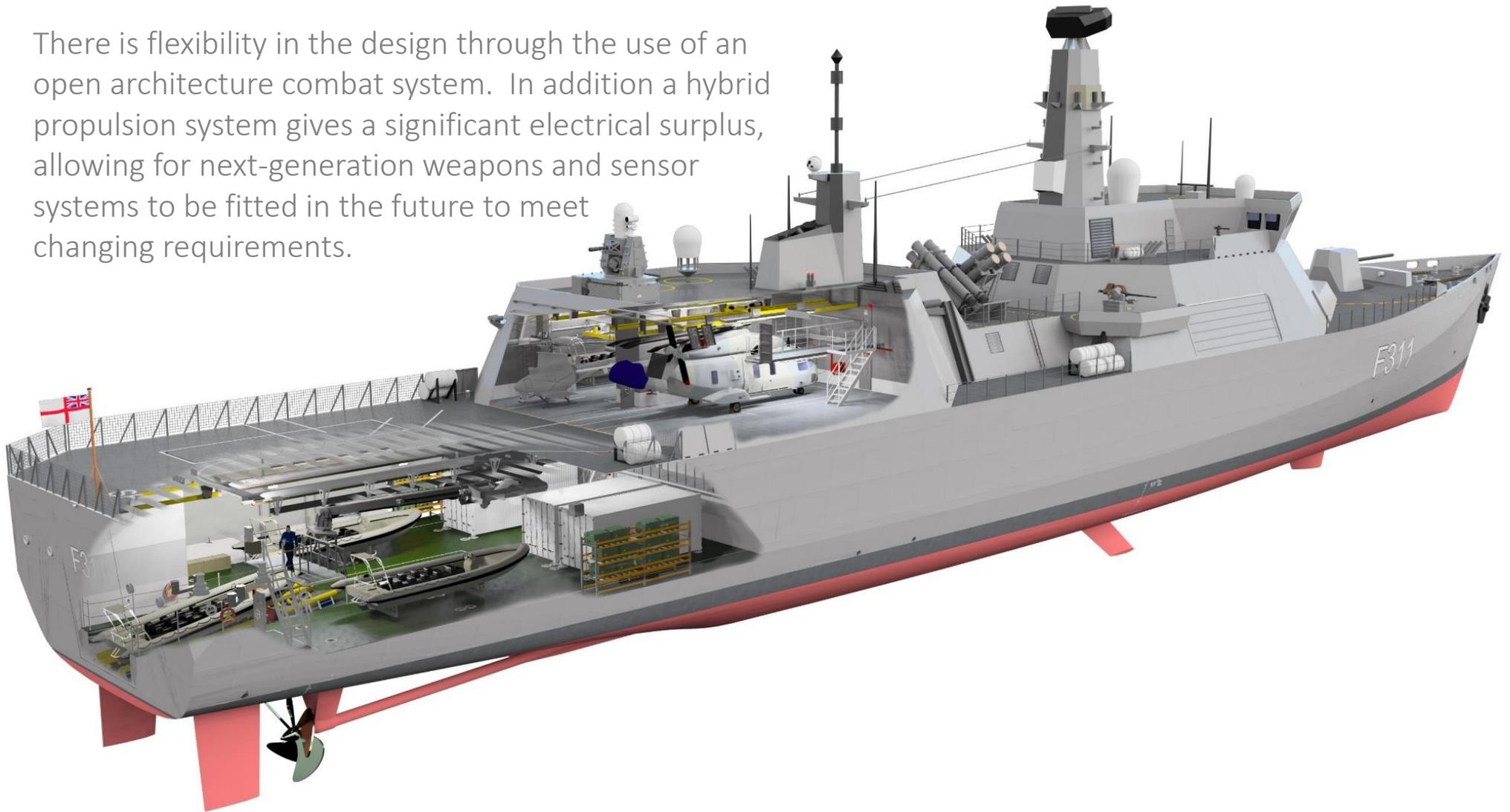


Future capability growth is enabled by space, electrical power and weight margins.

Designed for the future

Spartan has been designed with the space and the margins to allow for future growth and through-life upgrades. The design includes a large hangar and a stern garage, capable of accommodating a range of unmanned vehicles as well as future systems. The ship is designed to operate a wide range of unmanned vehicles and deploy Special Forces.

There is flexibility in the design through the use of an open architecture combat system. In addition a hybrid propulsion system gives a significant electrical surplus, allowing for next-generation weapons and sensor systems to be fitted in the future to meet changing requirements.

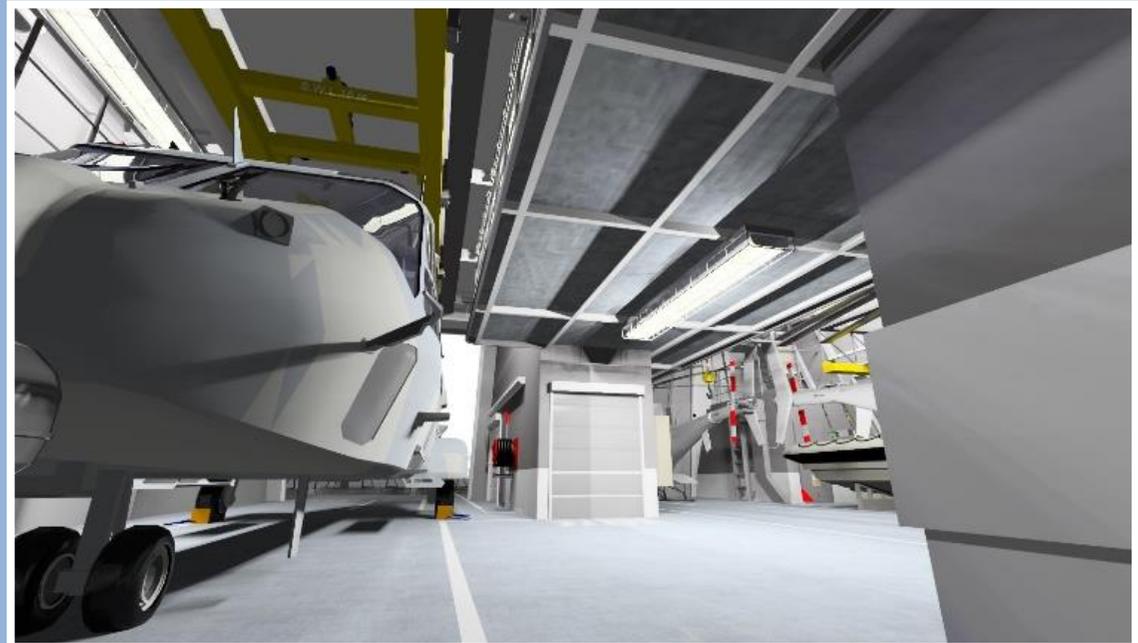


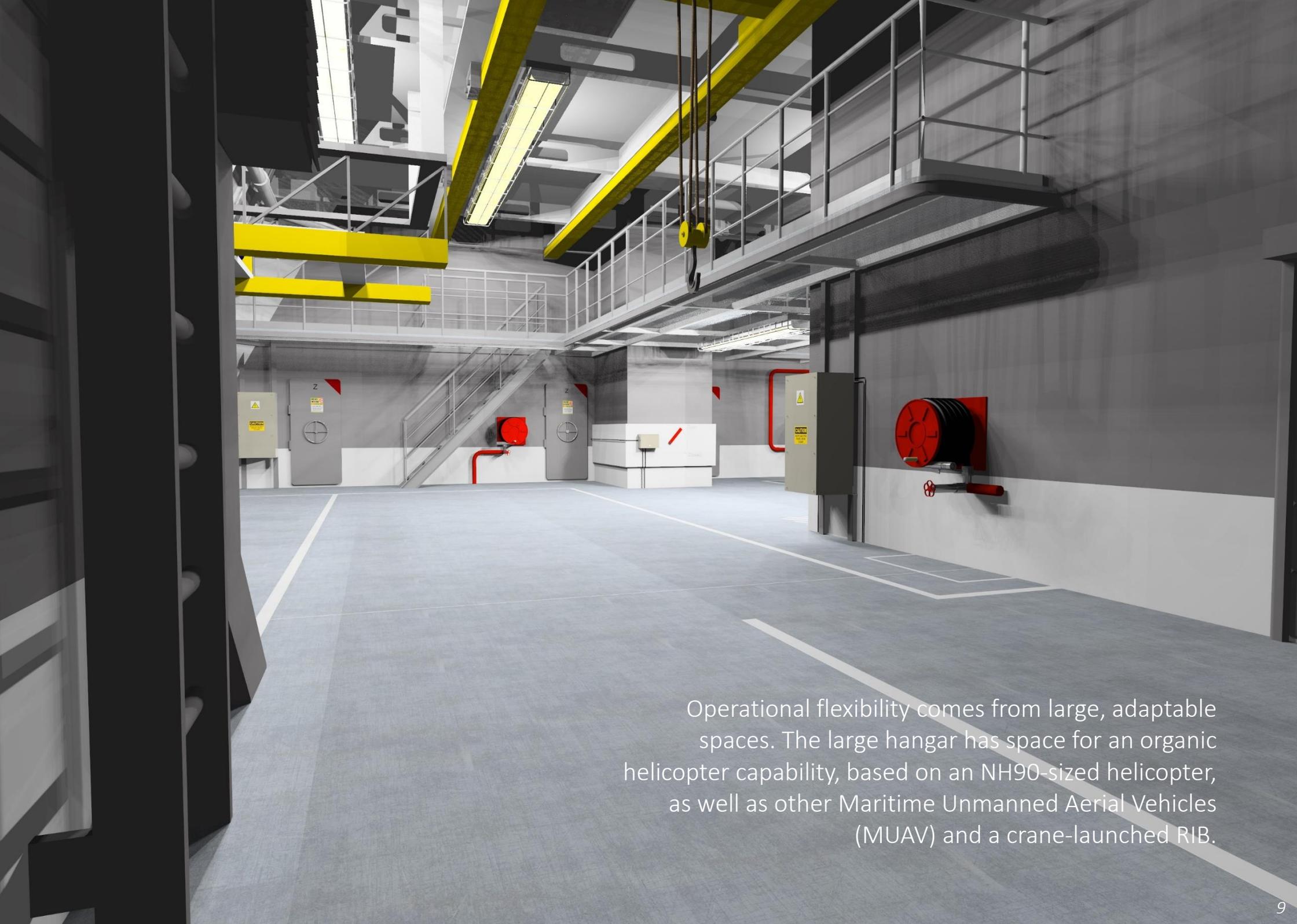
Key feature: adaptable stern garage

With a large, reconfigurable multi-mission stern garage with access to a stern ramp, *Spartan* has been designed to be adaptable in a rapidly changing world. This adaptable space is designed to accommodate waterborne assets such as Rigid Inflatable Boats (RIB), Unmanned Underwater Vehicles (UUV), Unmanned Surface Vehicles (USV), Variable Depth Sonars (VDS), humanitarian aid stores and equipment containers.



Key feature: large, flexible hangar



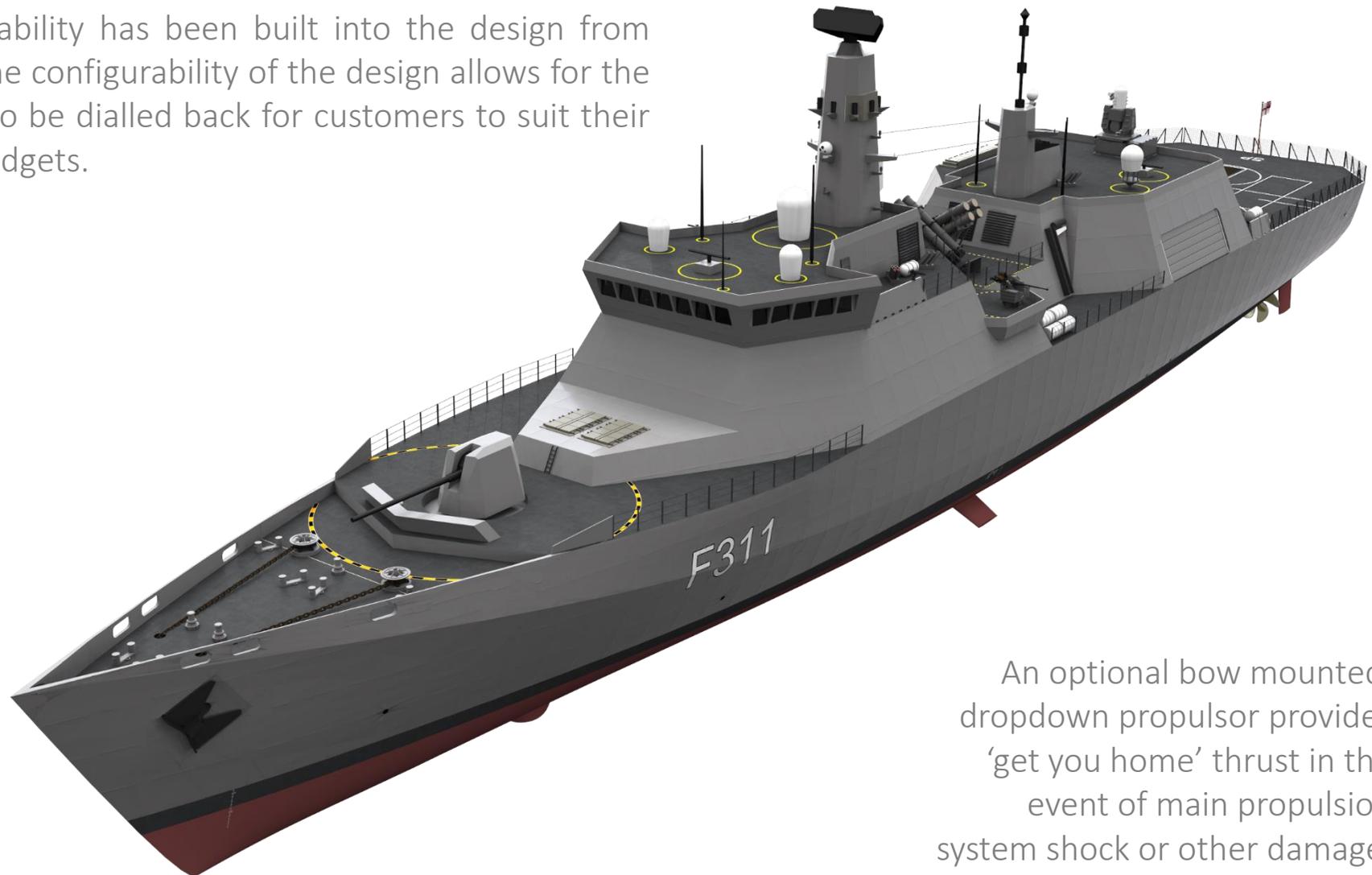


Operational flexibility comes from large, adaptable spaces. The large hangar has space for an organic helicopter capability, based on an NH90-sized helicopter, as well as other Maritime Unmanned Aerial Vehicles (MUAV) and a crane-launched RIB.

Survivability built in from the keel up

In order to allow for the highest levels of survivability, *Spartan* has been designed with three separate powered zones, separated sensors and primary weapons, and an alternative operations room. The CODLAD propulsion system also has sufficient redundancy to maintain propulsion even after significant damage.

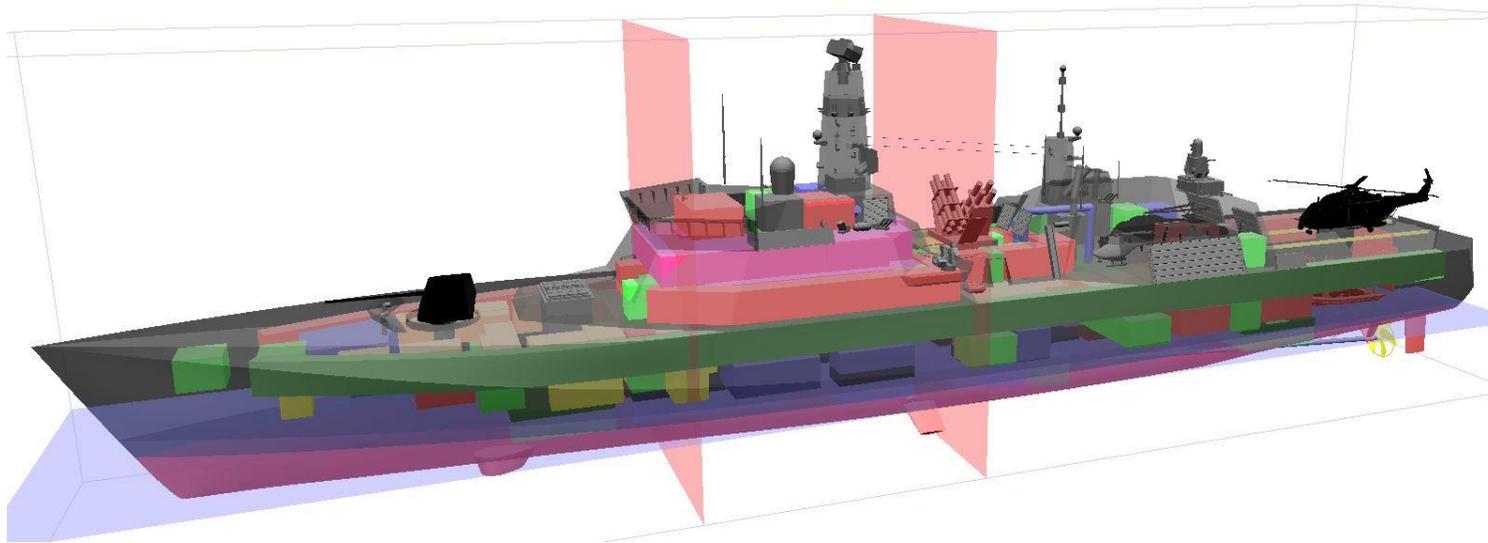
Whilst survivability has been built into the design from the outset, the configurability of the design allows for the survivability to be dialled back for customers to suit their needs and budgets.



An optional bow mounted, dropdown propulsor provides 'get you home' thrust in the event of main propulsion system shock or other damage.

The main operations room is supplemented by a secondary operations room with space for five operators, either for UXVs or to take over prime functions in the event of damage.

The ship has three zones, all with independent power and the means to fight-on should one be compromised.



Blastproof doors are provided, whilst blastproof bulkheads are optional. System positioning has been used to reduce vulnerability whilst allowing for a reduction in capability for design to cost.

Vertically and horizontally separated passageways and technical galleries allow for ease of movement as well as vulnerability reduction of key services.

Steller Systems has been working with *Survivability Consulting Ltd. (SCL)* to design in cost-effective survivability from the outset. *SCL* is a micro-SME that specialises in delivering assessment, advice and software services in the fields of survivability and lethality for the UK MOD and defence industry. This includes the assessment of platforms through all stages (concept, initial design, detailed design and in-service), optimisation of structural and systems layout, vulnerability reduction technologies, lethality and escape and evacuation.

SCL

“Design it for war and make it work for peace”



Steller Systems is a privately-owned, completely independent naval architecture and systems engineering consultancy. We offer a wide range of naval architecture services covering all stages of a vessel's life cycle, from initial concept design through to full detailed design, structural analysis, design review, stability analysis and emergency response. We have experience in all sectors of the industry, having worked extensively on military surface ships, submarines and unmanned vessels, and in the private sector with a range of commercial vessels and super yachts.

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