

THE THAMES CLASS OFFSHORE PATROL VESSEL

The Coast Guard version of the Thames Class Offshore Patrol Vessel (OPV) has been designed to support a wide variety of naval and coast guard missions, including EEZ surveillance, coastal water security, safety at sea and humanitarian aid.

The OPV design incorporates proven commercial ship design standards, equipment, and technology to provide a cost-effective base vessel which can be readily adapted to specific needs and incorporate flexible mission modules to meet changing requirements.



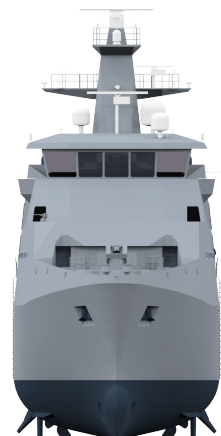
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The 85.5 metres, abt. 2,000 tonne displacement OPV has a top speed of 25 knots, with a range of abt. 5,000 NM, while accommodating a complement of up to seventy (70) persons with a separate area to temporarily accommodate up to fifty (50) supernumerary persons.

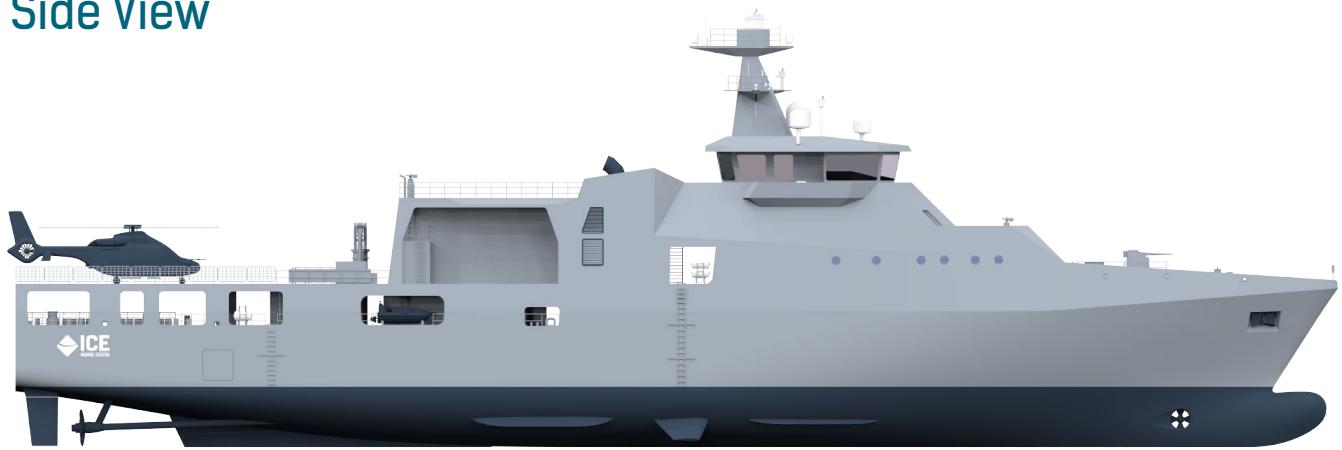
The vessel has an emergency transport capacity of up to 200 persons in total.

The vessel is fitted with a combined propulsion configuration with two (2) Main Diesel Engines and two (2) E-motors connected through two (2) Gearboxes to two (2) shaft lines each driving a Controllable Pitch Propeller (CPP).

The vessel is equipped with an air and surface surveillance radar for the detection of low flying aircraft, a flight deck capable of handling a helicopter up to 11 tonnes (max. take-off gross weight) and a hangar capable of accommodating a helicopter up to the size of a Eurocopter AS365 Dauphin, or equivalent, plus two (2) Unmanned Helicopters.

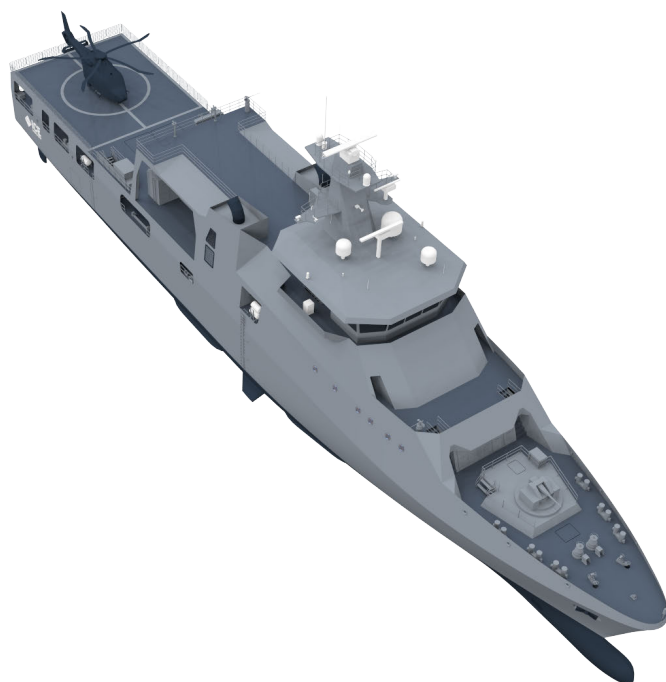
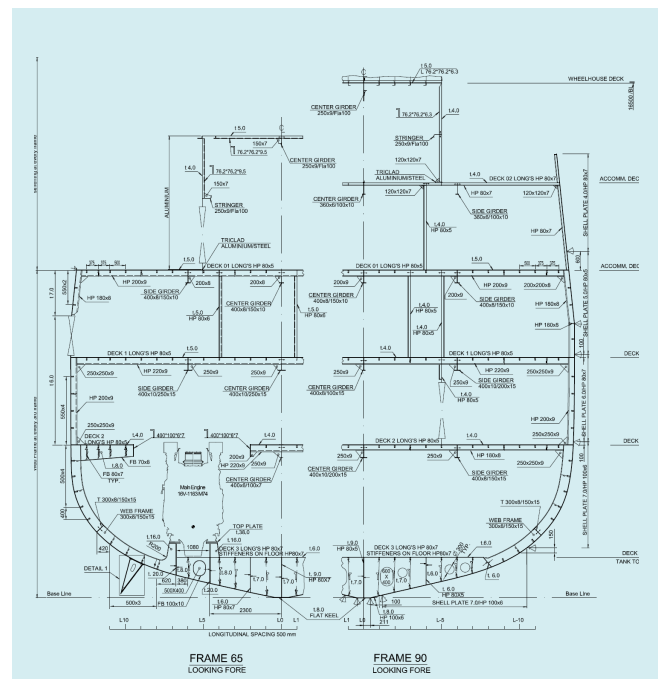


Side View



Design Benefits

- Off-the-shelf commercially available equipment,
- Superior hull lines, CFD optimized,
- Power-take-in (PTI) mode up to 12 knots,
- Low fuel oil consumption, high propulsive efficiency,
- Ease of access for inspection, maintenance and repair of all equipment and structure,
- Construction-friendly: ICE can assist with a transfer of shipbuilding technology, programme planning and procurement support, as necessary.



Principal Dimensions

Length o.a	85.50 m
Length p.p	80.00 m
Breadth mld.	13.50 m
Depth mld.	7.70 m
Draught, summer	3.80 m
Displacement	abt. 2,000 t

Tank Capacities

Fuel Oil	abt. 300 cbm
Fresh Water	abt. 50 cbm

Performances

Max. speed	25 knots
Cruise speed	12 knots
Range @12 knots	abt. 5,000 NM
Endurance	30 days

Seakeeping

Stabilizing system	Active fin
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Manouvering

Bow thrusters (the 2nd one is optional)	2 x 280 kW
Rudders	2 x Rotary Vane Steering Geers

Propulsion System

Main diesel engines	2 x 7,400 kW, 1325 rpm
E-motors	2 x 560 kW
Propellers	2 x CPP, Diam. 3.10 m

Auxiliary Equipment

Power generation	3 x 830 ekW, 1,500 rpm
Emergency Gen. Set	1 x 390 ekW, 1,500 rpm

Accommodation

Fully air-conditioned and heated accommodation for a crew of up to 70 personnel (40 crew and 30 auxiliary / mission personnel) with mess rooms, recreation area, galley, laundry, gymnasium and sickbay with treatment and recovery area.

A separate seating area with toilets and a sickbay is provided for up to fifty (50) supernumerary persons in temporary transit. Two side shell watertight doors are provided to enable rescuing survivors from sea.

Safety, Survivability

Main Engines and Generator Sets located in two separate engine rooms. Life-Saving equipment as per rules.

Two RHIBs are provided for the vessel: one (1) stern launched on a ramp aft and one (1) on port side launched with a davit.

Operational Features

Spacious bridge with 360-degree visibility, separate Mission Information Centre (MIC) room for surveillance and gun control.

Helicopter Platform equipped for landing and refuelling for a helicopter up to 11 tonnes in weight.

The Helicopter Hangar has simultaneously room for one main helicopter and two smaller unmanned helicopters and is equipped with a system to tow helicopters between the hangar and the landing platform.

Below-deck spaces - multi-role or dedicated for accommodation and storage of mission equipment and packaged goods.

Aft deck space for 2 containerized mission modules. Replenishment At Sea (RAS) facility provided on one side only.

Nautical and Communication Equipment

Modern maritime radio equipment according to GMDSS rules areas A3. Nautical equipment including integrated bridge with X and S-band radars.

Military Communication System

Military communication system consisting of:

- V/UHF Transceivers
- Airband VHF
- MF/HF radiotelephone
- Message Terminal

compatible to operate in military Tactical Data Link (Link 11, Link 16, ready for Link 22), connected to C2 or equivalent.

Armament and Sensors

The ship is designed to be equipped with:

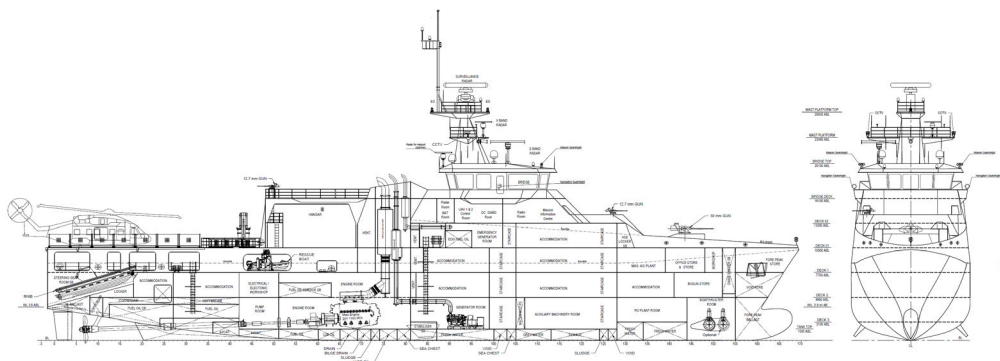
- 1 x 30 mm Gun with Electro – Optical (EO) and Fire Control System (FCS) – interconnected with MMS,
- 2 x 12.7 mm remote-controlled machine guns,
- Integrated Command and Control System – consisting of two state-of-the-art Electro-Optical sensor (EO) System, for surveillance and tracking, Fire Control Systems (FCS) and air and surface Surveillance Radar 3D,
- Two (2) x Unmanned Helicopters, equipped with maritime surveillance radar and thermal camera,
- Two (2) x Mission Search light - high-capacity LED – auto tracking / strobe mode.

Mission Management System (MMS) will be able to transmit live to the OC - JRCC both tactical area image and image obtained from the sensors of the vessels. Video recording devices for recording images from the sensors and cameras of the vessel.

The Vessel is equipped with an ammunition store for the 30 mm and 12.7 mm guns and a locker for small arms and weapon accessories.

Class – Lloyd's Register

✱100A1 NS (SSC), Offshore Patrol Vessel, UMS, SA2, LAP, AIR

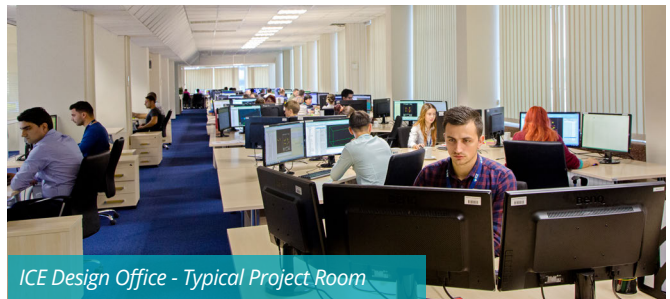


ICE GROUP CAPABILITIES AND EXPERIENCE

ICE has extensive experience from basic and detail design and tank testing of a range of naval ships including torpedo boats, patrol boats, missile patrol vessels and minesweepers. ICE has participated in design of Type 45 destroyers and the Queen Elizabeth Class aircraft carriers for the Royal Navy and in upgrades of Type 22 frigates and has provided shipyards in Canada and Greece with patrol vessel design and field engineering support during construction. As a design subcontractor for major defence contractors, ICE has participated in design of OPVs for the Middle East and the Americas as well as in ships for the US Navy. ICE executives have personal experience from managing design, construction and refit of many naval vessels ranging from submarines to helicopter carriers.



ICE Main Design Office



ICE Design Office - Typical Project Room



Offshore Patrol Vessel (OPV) 90m



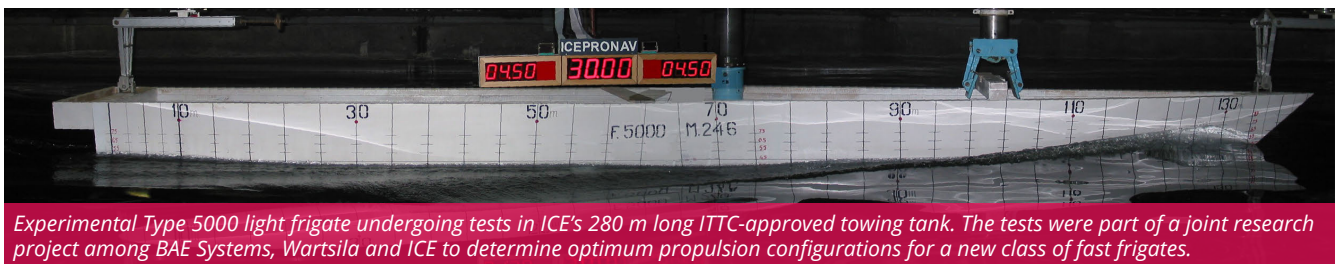
Mid-Shore Patrol Vessel (MSPV)



Ocean Patrol Vessel (OPV) 99m



Patrol Vessel for the Greek Navy



Experimental Type 5000 light frigate undergoing tests in ICE's 280 m long ITTC-approved towing tank. The tests were part of a joint research project among BAE Systems, Wartsila and ICE to determine optimum propulsion configurations for a new class of fast frigates.



ENGINEERING CERTAINTY

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With a 55-year track record and an annual output having exceeded 700,000 professional engineering man-hours, the International Contract Engineering (ICE) Group is one of Europe's largest independent ship design consultancies. We provide high-calibre multi-discipline design services to yards and owners in the commercial shipping, defence and offshore energy industries, ranging from conceptual studies and Class drawings to detail design and production information. We cover a full range of naval architecture and marine engineering disciplines such as hydrodynamics, structural, mechanical, piping, electrical, instrumentation, outfit and HVAC. Our experience includes gas carriers, passenger vessels, navy and coast guard ships, chemical tankers, drill ships, FSO/FPSOs and a range of other vessels. We also have available proprietary designs that can be adapted to clients' requirements.

With our head office in the Isle of Man and engineering facilities in Romania and Croatia, we provide high quality design and engineering at very competitive prices.