

Don't let just anyone take the helm

On 8 July 2026 the Bundestag's budget committee released the funds for four MEKO® A-200 DEU frigates, with an option up to four more. The rudder and steering gear systems for these ships are to come from Bremen. LOEWE MARINE has been engineering manoeuvrability for the MEKO® family for years, and its reference list is now in the water



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"Al Qadeer" is a MEKO 200-class frigate for the Egyptian Navy

Ask where a surface combatant's fighting performance is decided and the answer will run through sensors, effectors, propulsion and signature management. The rudder rarely comes up. That is an oversight. Tight turning circles at speed, course-keeping in a seaway, quiet running when quiet running matters — all of it passes through the manoeuvring system. It is not a fitting bolted on at the end of the build. It is a capability, and it can be optimised or wasted.

A programme in a hurry

The German Navy's new anti-submarine frigates arrive under exceptional time pressure. After the F126 programme was discontinued at the end of June 2026, the Ministry of Defence turned to a market-available design: the MEKO® A-200 DEU from TKMS, 121 m long, approximately 16.4 m in the beam and 3,950 tons displacement. Four ships have been called off firmly at around €6.3 billion. The first is to reach the fleet by December 2029, and one roughly every nine months thereafter.

Schedules like that are won or lost in the supply chain, which is why TKMS secured capacity at its subcontractors under a pre-contract signed in February 2026, months before the main approval. LOEWE MARINE is set to continue its MEKO® work

into the German programme — not as a newcomer to the platform, but as the firm that has already done it.

Eight rudders, four MEKO® A-200 frigates

Some two years ago, TKMS commissioned the Bremen team to design and build four pairs of full-spade rudder systems with large rudder trunk sections for four MEKO® A-200 frigates built in Germany for a foreign navy. Eight rudders, four ships, delivered to specification. "The whole team at LOEWE MARINE are delighted to have completed this order to TKMS's total satisfaction," says founder and naval architect Carsten Löhmer. "And we are doubly delighted to be continuing our successful cooperation with TKMS."

Proven in service with the Brazilian Navy

That cooperation continued with a follow-up order from Águas Azuis, the joint-venture led by TKMS whose members also include Embraer Defense & Security and Atech: eight special full-spade rudder systems, complete with eight differential-cylinder steering systems, for the four frigates of the Brazilian Navy's

Tamandaré Class Frigate (PFCT) programme — a Brazilian adaptation of the MEKO® A-100 design. The ships measure 107.2 m by 15.95 m and displace 3,455 tons. The design objective was stated plainly at the outset: maximum energy efficiency and signature optimisation under naval operating conditions.

That objective is no longer a projection. The lead ship, F Tamandaré (F200), was commissioned on 24 April 2026 and is in operational service. The frigate “Jerônimo de Albuquerque” (F201), the second ship of this class, began sea trials in August. The third of class, F Cunha Moreira (F202), was launched that June and construction of the fourth frigate has also already begun, marked by the keel-laying ceremony held on 13 August.

All four are due in service by 2029, and a memorandum of understanding signed in April 2026 paves the way for discussions on a second batch of four.

“It is another opportunity for us to demonstrate our expertise and passion for manoeuvring systems,” Löhmer says. “We would like to thank TKMS and the team at Águas Azuis for the continued confidence they have shown in us.”

What optimisation is actually for

NAVY ES/MS-Opt is not a catalogue item with a naval sticker on it. The optimisation is done against the operating profile of the vessel it is destined for, and it is engineered to deliver six things at once.

Installation and maintenance are simplified, which shortens yard time on the build and again at every docking, and OPEX falls accordingly. Manoeuvrability in operational use increases — the metric that decides whether a ship can hold station, evade or close as the situation requires. Acoustic and vibration signature is reduced, because a rudder sitting in disturbed flow is an emitter as well as a control surface, and in the anti-submarine role that matters as much as anything on the mast. Service life and redundancy increase, which is a survivability argument rather than a maintenance one. And the sum of those effects raises combat rating and performance.

These six are not independent variables. A profile chosen for hydrodynamic efficiency is also, if the design work is done properly, the profile that runs quieter and lasts longer. Getting all six at once is the engineering problem LOEWE MARINE exists to solve.

Bespoke, not adapted

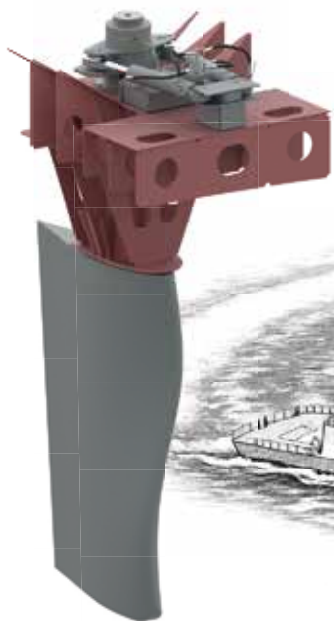
Naval programmes are unforgiving of suppliers who treat a warship as a merchant vessel with different paint. Loads are higher, signature requirements are absolute, redundancy is contractual. LOEWE MARINE’s answer is a small, highly qualified team working to a bespoke brief from the outset, backed by a service centre in Hamburg for the decades that follow handover. “The entire team shares my passion for bespoke engineering, and I am immensely proud of them,” Löhmer says. “We choose our people very carefully — and so do our partners.”

You only get the best customised manoeuvrability technology for naval units if you don’t let just anyone take the helm.

About LOEWE MARINE

LOEWE MARINE GmbH & Co. KG was founded in 2011 by naval architect Carsten Löhmer. Headquartered in Bremen with a service centre in Hamburg, the company is an established shipbuilding supplier and a provider of ship-related services worldwide. Its marine systems and green shipping portfolio covers the design, production and installation of highly efficient full-spade rudder systems of all profile types and sizes for all vessel types, the supply, maintenance and repair of steering gears of all types, and the production of wake equalizing ducts. The LOEWE BIOSECURITY division, established in 2019, adds maritime health protection and cleaning systems.

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NAVY ES/MS-Opt for naval vessels

- Simplified system installation & simplified maintenance
- Reduction of system’s OPEX costs
- Increased manoeuvrability of units in operational use
- Reduction of acoustic and vibration signature
- Increased service life and redundancy
- Increased combat rating and performance

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