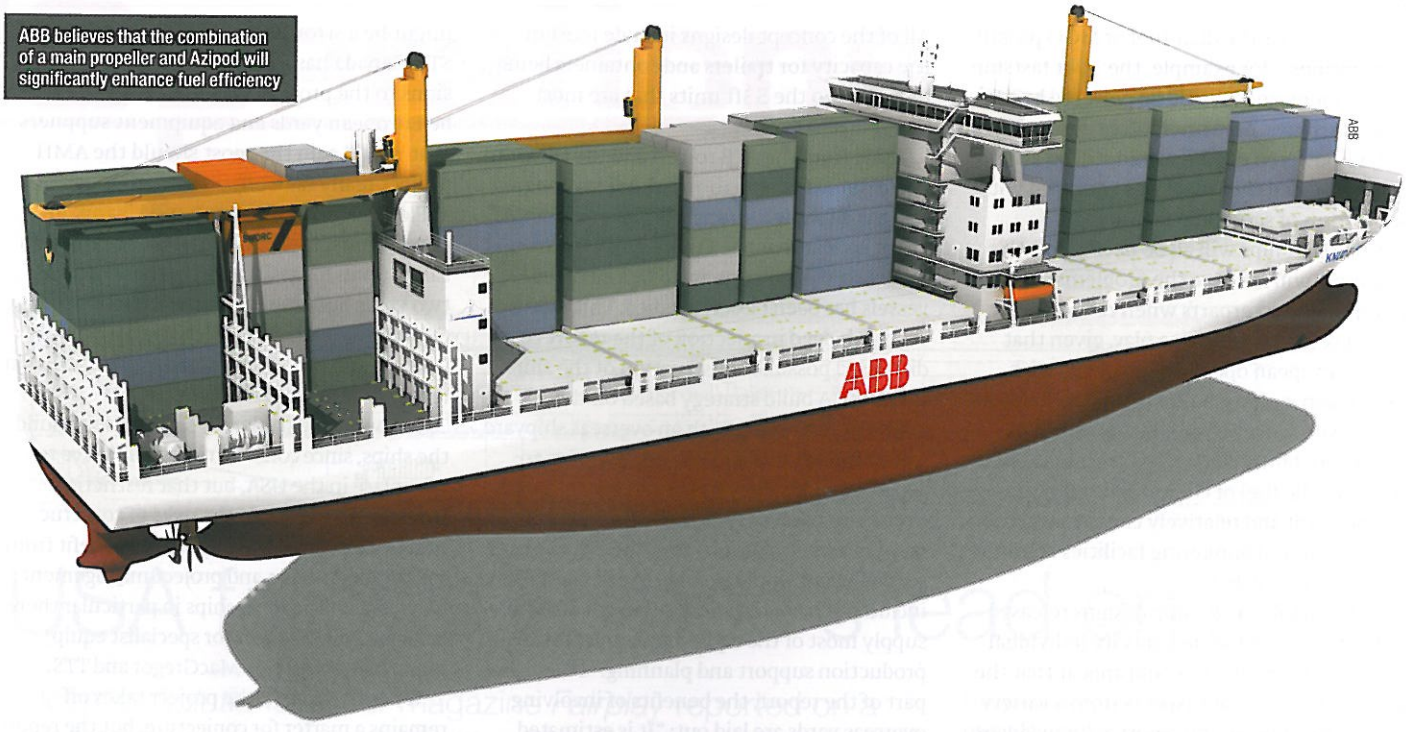

ABB believes that the combination of a main propeller and Azipod will significantly enhance fuel efficiency

Novel feeder vessel could set new standards

Danish naval design and marine consultancy Knud E Hansen and joint-venture partner ABB have developed a fuel-efficient 2,000teu container feeder vessel that they believe could set new standards for the type

The vessel's main dimensions have been optimised for calling into Bangkok, but the companies believe that the design will deliver benefits to operators and the environment on any route. It has been developed with an emphasis on fuel economy and low environmental impact, and is expected to need to use less water ballast than a conventional design. It fits well with the industry's increased interest in so-called slow steaming and the use of variable transit speeds and loading flexibility. It can carry more containers and has a higher reefer capacity than similar-sized vessels of traditional design.

As Eero Lehtovaara, a senior vice-president at ABB, explained, the company had been considering making its entry into the market for container feeder vessels for some time. "We don't have a big profile in that area currently," he informed *Solutions*, "but we have analysed the market and are confident that there will be plenty of demand for vessels in the 1,000–3,000teu range in the near future."

Lehtovaara revealed that ABB opted for the Bangkokmax-size vessel because the type has clear design parameters. "We felt that it would be easy to compare it with similar vessels of this type," he said. "We talked to a lot of owners and operators, and one thing that became clear was that a lot of the vessels that entered service in the last decade – many of which were designed for speeds of 22–25kt – have rarely been required to operate at that speed. More often than not, we found that they operate at slower speeds than they were designed for. What this means is that a lot of the power that was built in to these vessels isn't being used."

This realisation, and the growing interest in slow steaming, is at the heart of the machinery selected for the feeder ship. "We decided to look at a hybrid solution and see what that could do in terms of energy efficiency," Lehtovaara told *Solutions*.

The propulsive efficiency of the new design is boosted by an electrically driven counter-rotating Azipod unit fitted behind the main propeller, which is directly driven by the engine. The power balance between the main propeller and the Azipod is roughly 65%/35%. As the Azipod can be turned through 360°, the vessel will be extremely manoeuvrable and so reduces – or even eliminates – the need for assistance from tugs when in port.

Compared with the diesel-direct propulsion system in a vessel of conventional design, the main engine has been considerably downsized; the propeller diameter is correspondingly smaller and it has a low shaftline. Because of this, ballast water is rarely required to submerge the propellers in lightly loaded conditions.

At 18kt the main engine and a shaft