

**Title:** Enhancing the DP Operator Experience

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### Abstract

Dynamic positioning systems have become increasingly complex, typically evolving based on available technologies and expectations of what operators might need rather than a holistic look at their experiences. Furthermore, the overall look-and-feel has been largely left up to engineers as opposed to user experience (UX) experts. The result is operators being more preoccupied with managing the computer versus the primary task of controlling the ship.

Rather than follow an engineering-centered redesign approach, the Power Conversion team partnered with UX experts from GE's Design & Experience Center of Excellence and Connected Experience Labs to implement a user-centered approach to supporting true seamanship. Leveraging 40+ years of engineering experience and 800+ system installations, design best practices, user research with 60+ participants and analyses of operators' HMI activity logs from different types of vessels, the new DP HMI and console improves situational awareness, promotes better decision-making and increases operator efficiency and safety. Visual and auditory alarm presentation minimizes operator irritation.

Every piece of information that the operator needs and every action he or she performs has been reviewed and optimized. At the same time, needs of secondary users (e.g., captain, chief engineer or fleet supervisor) are supported by allowing user-specific features to be selected. Enhancements extend beyond the console and HMI to the underlying control algorithms. For example, an energy efficient DP mode is integrated to enable greater operator efficiency and reduced emissions, power consumption and thruster/machinery wear and tear in rough and calm seas.

DP lessons learnt are being integrated into a common experience across our offerings so that we can continue to power, propel and position the marine industry with the most mariner-friendly and cutting-edge solutions possible.

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