

**Title:**     **Dynamic Positioning for Heavy Lift Applications**

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***Abstract***

In the Summer of 2007 the Office of Naval Research (ONR) initiated a technology development program called STLVAST (Small to Large Vessel At-Sea Transfer). The goal of this program is to develop “enabling capabilities” in the realm of logistic transfer (i.e. stores, equipment, vehicles) between a large LMSR vessel (270m, 62,000t) and a smaller ship (168m, 75,000t). Beginning as one thread amongst several complimentary capabilities, dynamic positioning has developed as a core capability with potential application to future seabasing operations. However the seabasing operational environment can be extreme, and requires safe position keeping when the vessels are in close proximity, at ahead speeds, and in high sea states. This paper discusses the initial development and successful testing of an innovative approach using cycloidal propellers to achieve the objectives of what we call Close-In Precision (CIP) DP, as well as the current development of a wave feed forward (WFF) technology that has broader application in any existing DP architecture.

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