



VISIONS EAST
ROBOTIC MARINE SOLUTIONS™

Visions East, Inc. has invented, patented and is now delivering the world's first fully automated computer-controlled robotic fairing and painting system for marine vessel surfaces. The trademarked name, VEbot™ (short for "**V**isions **E**ast **R**obot"), is the product of a development effort to prove the patent claims detailing a comprehensive, computer-controlled robotic painting and fairing for use on large vessels.

By combining the sophisticated technologies of computer-aided design (CAD), computer-guided robotic machining and advanced coatings development, Visions East has automated the marine vessel fairing and painting process. The Visions East system deploys free-standing, multi-axis robots that are track-mounted and operate independently on both sides of the work envelope. An interchangeable wrist allows the robots, through automated tool exchange, to select from a variety of tools that match functional process steps performed by the system. The process steps the VEbot™ performs are listed below:

The Visions East VEbot™ Automated Computer-Controlled Marine Coatings Application System

<u>Process Step</u>	<u>Function</u>
1. Laser Mapping	Hull surfaces are mapped by a laser tool attached to the robot arm to collect measurement data used to determine tool paths for subsequent process steps
2. Robotic Spray Fairing (Yacht System)	100% Solids epoxy fairing material is sprayed by plural component equipment to fill low spots determined in laser mapping step
3. Robotic Milling (Yacht System)	A milling tool with a vacuum-through-head hollow bit is attached to the robot arm and used to mill the cured epoxy fairing material to the ideal shape
4. Robotic Sanding	A robotic vacuum-through-head multi-disc sanding tool is mounted on the robot arm to sand the milled surface and provide a profile for primers and topcoats
5. Robotic Painting	The appropriate spray equipment for the paint specification is attached to the robot arm to provide uniform coatings application of all primers and topcoats

The key benefit of the new system is repeatable uniformity of the coatings process. This comes from providing greater accuracy, precise measurement, mixing and application of coatings. Additional benefits from deploying the Visions East automated coatings system include:

- reduced labor cost through automated, 24/7 operation
- reduced material costs through an optimized, application method minimizing waste
- system designed to provide a cleaner and safer work environment
 - on-board debris vacuum systems
 - adaptation of new, 100% solids, "solvent-free" spray fairing
 - elimination of the need for worker scaffolding

Through automation of the marine coatings process, coatings failures are minimized and completion dates are predictably met.

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