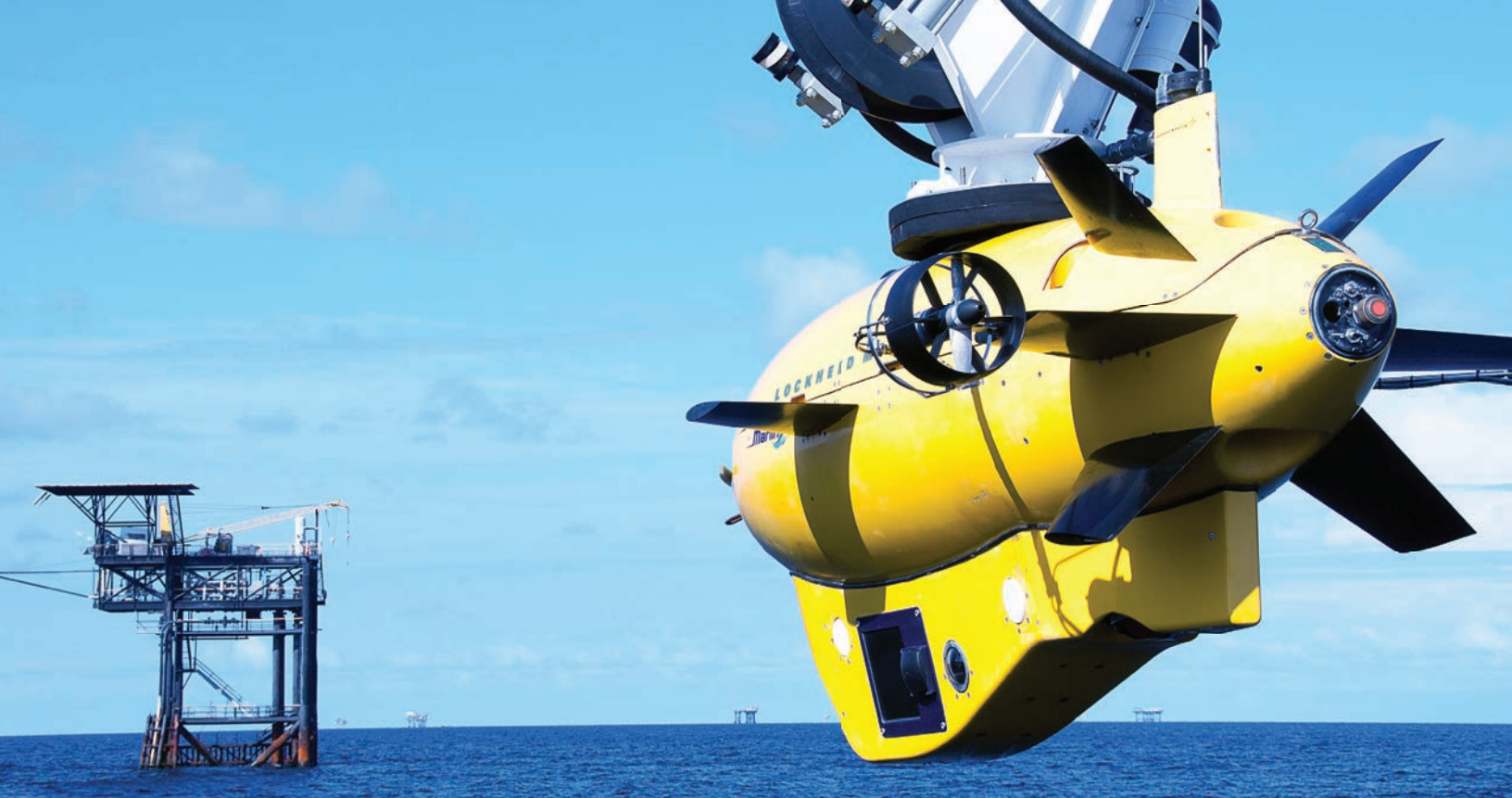




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We never forget who we're working for®

Marlin™
Autonomous Underwater Vehicle (AUV)





Marlin™ AUV: Better, faster, safer and more economical subsea inspections

Drawing upon decades of experience in developing advanced manned and unmanned underwater technology solutions, Lockheed Martin has developed the highly-advanced Marlin™ Autonomous Underwater Vehicle (AUV) for customers who conduct subsea infrastructure surveys and inspections.

Using the Marlin AUV to inspect offshore structures offers a compelling value proposition for the oil and gas industry by providing better, faster, safer and more economical inspections compared to traditional methods.

The Marlin AUV's unique 3D imaging sonar, advanced sensors, software and navigation capability allow operators to conduct offshore structure inspections up to four times faster and significantly less expensive than other methods, while putting fewer divers at risk.

Operated from a small utility class vessel or from a fixed or floating platform, the Marlin AUV performs inspections autonomously. Its movement is guided by a high-level mission plan generated by either shore-based or offshore personnel.

For vehicle launch and recovery, the Marlin AUV uses a patented autonomous homing and docking system that releases and recovers the vehicle underwater, eliminating dangerous surface launch and recovery.

The Marlin AUV's high-resolution optical and acoustic sensors provide complete and integrated 3-D geo-referenced images. It models up to 1,000 feet beneath the surface and rapidly inspects offshore structures in a fraction of the time required for a remotely operated vehicle or diver inspection.

Physical Specifications: Offshore Platform Inspection System Configuration*

Length	10 ft (3.05 m)
Diameter	5 ft (1.52 m)
Height	46" (1.22 m)
Weight	2098 lbs (954 kg)
Payload	250 lbs (114 kg)
Depth Rating	1000 ft (300 m)
Propulsion/Thrusters	2 x 9" Horizontal / 2 x 9" Vertical
Endurance	12-24 hours (Mission Dependent)
Speed	Up to 4.0 knots
Lift Point	Autonomous Latching
Navigation	INS / DVL / GPS
Communications	Acoustic Modem, RF, Ethernet
Autonomy Fail Safes	E-Stop Transponder, Beacon, Fault and Leak Detection
Sensor Payload	3D Imaging Sonar, HD Video Camera, Forward Looking Sonar, MBES, HID Light, On board Mission Data Recording

* Reconfigurable for Other Mission Packages as Required



Marlin Autonomy

The Marlin AUV's autonomy is comprised of three components: Vehicle Control, Perception and Response.

Vehicle Control

Manages the navigation system, communications, vehicle health, as well as safety and emergency response.

Perception

Enables the vehicle to be aware of its current environment. Provides object mapping for feature detection used for feature based navigation, as well as the detection of anomalies in the structure. Perception provides real-time sortie status.

Response

Enables reasoning and decision making by providing sequential and event-driven behavior coordination and arbitration. Response provides path planning, waypoint guidance and contingency capabilities, allowing the mission to proceed with minimal human interaction.

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