

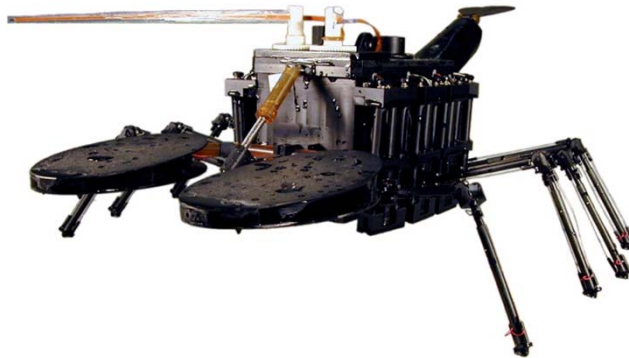
Summary of the Evolution of the Ultimate Littoral AUV, the Biomimetic Swimming/Walking RoboLobster



Lobster

Designed by: Mother Nature

Development Time: 100 Million Years



1st Generation Walking RoboLobster

Designed by: Massa Products
and Northeastern University

Development Time: 13 Years

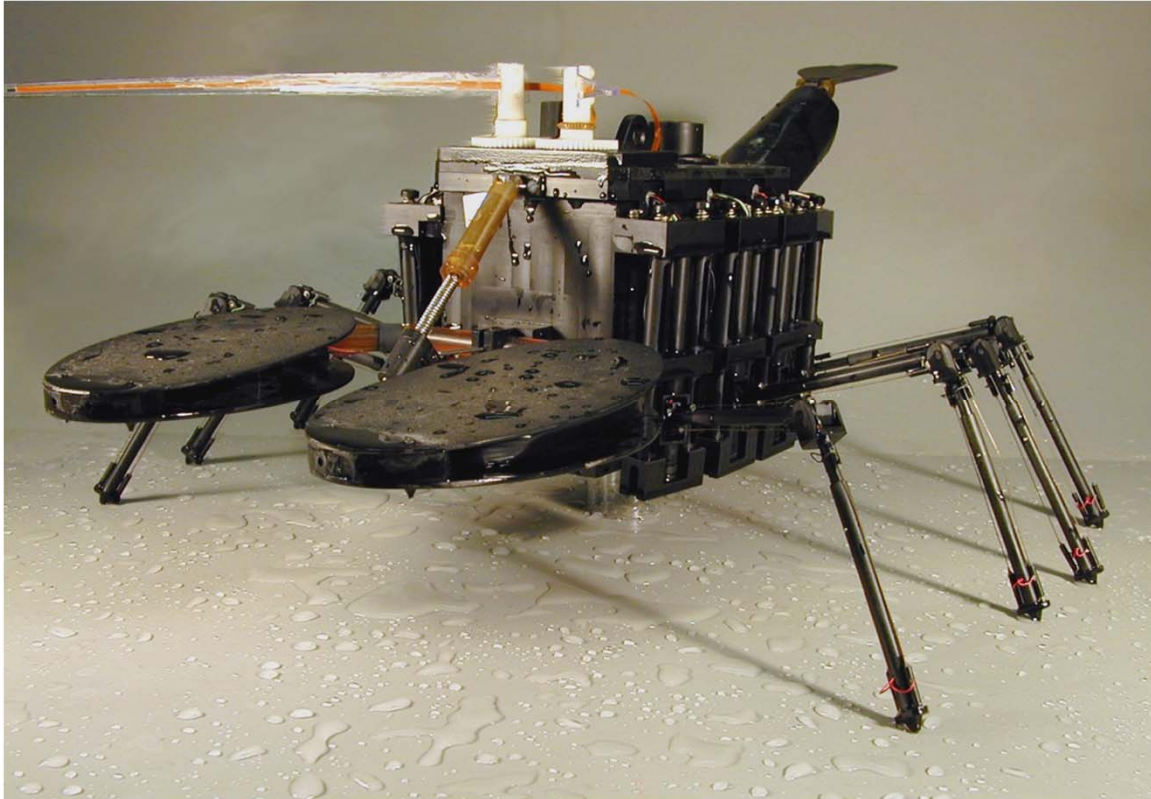


2nd Generation Swimming/Walking RoboLobster

Designed by: Massa Products

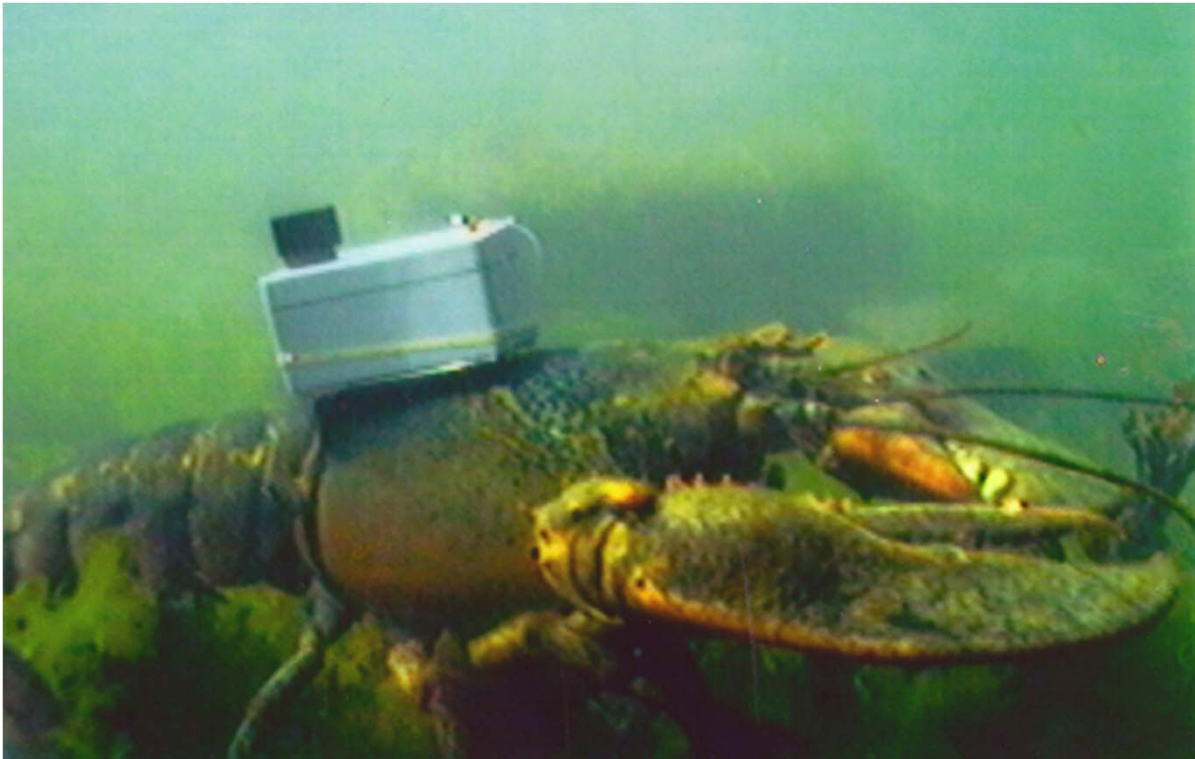
Development Time: 3 Years

Autonomous Ambulatory Robot Based on the American Lobster



- System based on actual neural networks in the lobster walking system
- Ideal platform for shallow water mine counter-measures
 - Uses hydrodynamics, not weight, to achieve stability in turbulent water
 - Can walk in any direction
 - Can be outfitted with inexpensive acoustic navigation, communication, and mine detection systems
- System feasibility proved by work on DARPA funded ONR administrated contracts and grants
- Massa is developing a production engineered fleet ready model under a multiyear ONR Contract

Lobster Biotelemetry System



- Teamed with Northeastern University.
- Monitors neural activities of lobsters in the ocean.
- Transmits information from lobsters via high speed acoustic data link;
 - Communication concept overcomes shallow water reverberation problems.
- Hand-held sonar allows diver to find and recover lobsters.