

November 010

Excerpts from recent study

Global Market for Unmanned Sea Vehicles

**Sales, Competitors, future market
potential**


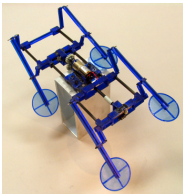

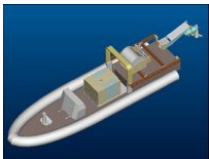

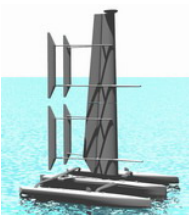












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Part A. USV Identified Acquisitions (2004-2010)

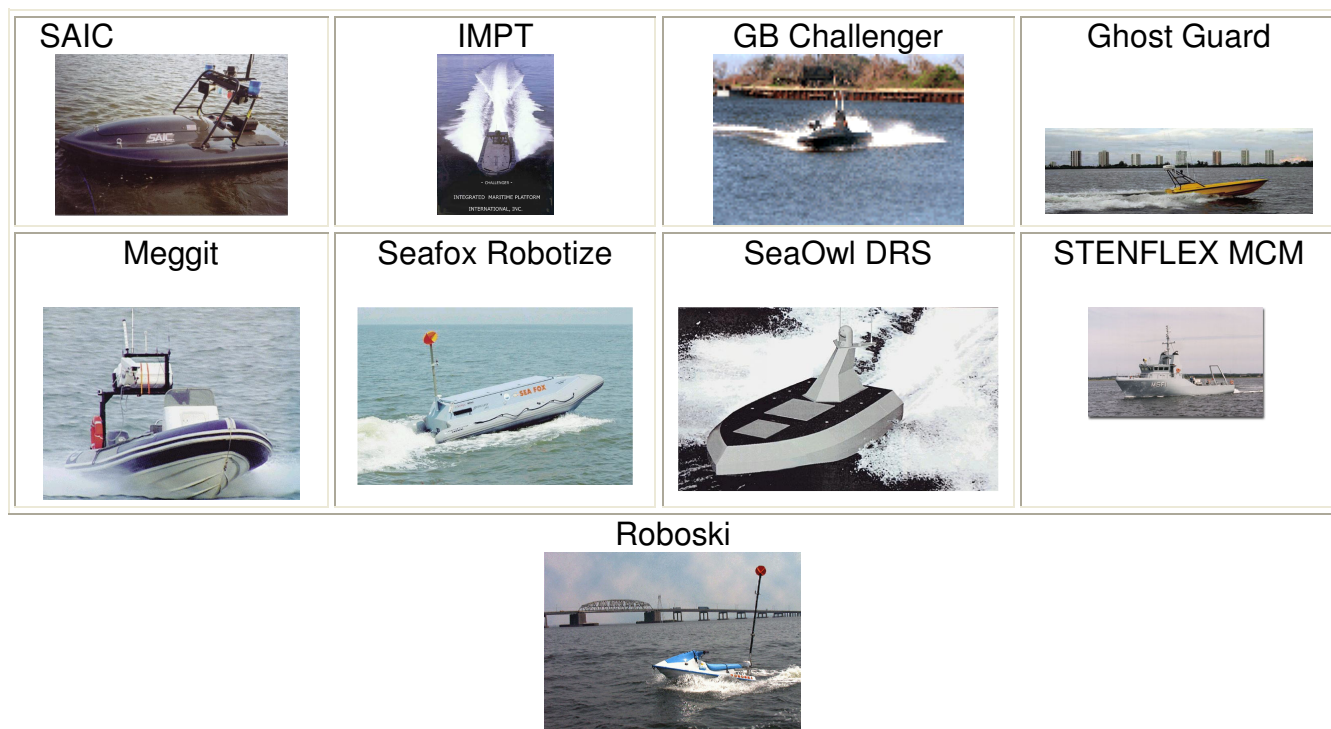
| Country | Maker | Designation | Qty | Year | Remarks |
|----------------|----------------------|--|-----|------|---|
| US Navy | General Dynamics | "Fleet" class ASW USV | 1 | 2008 |  |
| US Navy | General Dynamics | "Fleet" class | 4 | 2006 | \$12.7 million contract |
| Germany, Navy | Rheinmetall Defence | M8 USV  | | 2008 | EUR 1.3 million. Based on Watercraft M8 fast attack boat |
| UK Navy | QinetiQ | FIAC RT  | 2 | 2005 | conversion of rigid inflatable boats into remote surface targets for live firing |
| UK | Atlas-QED Consortium | MCM USV  | | 2007 | demonstrator system |
| Israel Navy | Rafael | Protector  | 2 | 2007 | |
| Singapore Navy | Rafael | Protector | 4 | 2008 | |
| Indian Navy? | Rafael | Protector | 2 | 2009 | |
| Nigeria Navy | Aeronautics | Seastar  | 3 | 2006 | |

Part B. USV under Development

| Country | Developer | Designation | Status | Remarks |
|---------|-----------------------------|--|-----------------------------|---|
| US Navy | USN Undersea Warfare Center | Spartan Scout  | Development initiated 2002 | A demonstrator of technology |
| USA | Radix Marine | Dragonfly | Development abandoned? 2006 | |
| USA | Carnegie Mellon University | Water Runner  | A prototype only (2006) | A legged robot that can move on ground and water |
| USA | Zyvex Technologies | Piranha  | Developed by 2010 | carbon-fiber composites and nanotube molecules |
| USA | EDO | LCS MCM  | Two-year contract from 2007 | USN demo contract for \$11 million |
| USA | AAI | Fleet-class common unmanned surface vessel | Developed completed 2010 |  |
| USA | Harbor Wing | X-3  | 2009 | Trimarans, wind powered |
| USA | QinetiQ | Blackfish | Tested by USN on 2010 |  |

| Country | Developer | Designation | Status | Remarks |
|--------------|--|--|--------------------------------|--|
| France | DCNS | Rodeur  | 2010 Demonstration | civilian evacuation control demo |
| France | Thales Underwater Systems | Module for Spartan Scout  | collaboration with USN 2008 | Anti Submarine Warfare Module |
| Sweden | ECA | INSPECTOR  | Showcased at 2009 | |
| Turkey | Global Teknik A.S. | IDA  | Developed ended 2010 | Development funded by TUBITAK (\$3 million) |
| Iran | DIO (MoD) | Bayar-2  | Developed by 2010 | Designed for suicide attacks against large vessels |
| Israel | Elbit | Silver Merlin  | Marketed since by 2006 | |
| Israel | Elbit | Stringray  | Exposed in 2005 | |
| Singapore | ST Engg | Venus  | Revealed by 2009 | 9-meter long |
| China PRC | Shenyang Aerospace Xinguang Group | XG-2  | Development initiated 2006 | radius of 50-100 km. |

Selected Abandoned R&D



Part C. Selected Identified Requirements

| Country | Requirement | Qty | Year | Remarks |
|-----------------|--|-----|------------|---|
| USA Coast Guard | USV to fight Sea smuggling | NA | 2009 | Trials with Zyvex Piranha |
| US Navy | unmanned surface vehicle, long endurance | NA | 2009 | May be deployed for extended period and take measurements from internally developed sensor packages |
| Europe EDA | Maritime unmanned surface vehicles | NA | 2009 | RFI, European Defence Agency |
| Singapore | Unmanned underwater and surface vehicles | NA | Since 2005 | Preference for Local developments |
| India | Harbor protection USV | NA | 2009 | Navy has tried Rafael's Protector |
| South Korea | Harbor protection USV | NA | 2009 | |