SWIFT UNMANNED SURFACE VESSEL (USV)
ABOUT SWIFT UNMANNED SURFACE VESSEL (USV)

The Swift Unmanned Surface Vessel (USV) is improved with navigation safety, autoberthing and unberthing, ship performance, operation and maintenance efficiency, as well as cyber security to detect anomalies and reduce possible attacks on surface of the platform. These improvements are beneficial to various sectors such as maritime emergency and port security, oil and gas, hydrography and commercial markets.

FIRE FIGHTING VESSEL (SWIFT USV 9)

**Key Features**

1. COLREGS-based autonomous manoeuvring
2. Collision Detection and Collision Avoidance (CDCA) capability
3. Autonomous waypoint navigation or remote-controlled navigation within 5km using line of sight communications
4. Station keeping capability
5. Integrated operator control station (operation planning, control, monitoring, data analysis, debriefing and report generation)
6. NERVA Ship Management and Sensemaking System (SMS) for propulsion and auxiliary systems
7. Remotely-controlled fire monitor
8. Remote deployment of life buoy and life raft
9. Chemical, Biological and Radiological (CBR) detection and identification
10. Equipped with onboard water spray system to cool down the hull

**Applications**

- Coastal fire fighting in shallow waters and confined water space (rivers / canals)
- Hazardous gas detection and identification
- Surveillance and monitoring
- Search and rescue

HYDROGRAPHIC & ENVIRONMENTAL SURVEY VESSEL (SWIFT USV 10)

**Key Features**

1. Environmentally-friendly all electric propulsion system with zero emissions
2. COLREGS-based autonomous manoeuvring
3. Collision Detection and Collision Avoidance (CDCA) capability
4. Autonomous, remote or local navigation control modes
5. Station keeping capability
6. Integrated operator control station (operation planning, control, monitoring, data analysis, debriefing and report generation)
7. NERVA Ship Management and Sensemaking System (SMS) for propulsion and auxiliary systems
8. Sensemaking capabilities:
   - Predictive Diagnostics (PD),
   - Condition-Based Maintenance (CBM) and
   - Decision Support System (DSS)
9. Integrated payloads such as multiparameter water quality sonde, CTD, ADCP and sonar

**Applications**

- Hydrographic survey and mapping
- Environmental monitoring
- Water quality sampling, mapping and monitoring
ABOUT SWIFT UNMANNED SURFACE VESSEL (USV)

HIGH SPEED MARITIME VESSEL (SWIFT USV 18)

Key Features
- Proven efficient hull design
- Excellent seakeeping & high speed manoeuvrability
- COLREGS-based autonomous manoeuvring
- Collision Detection and Collision Avoidance (CDCA) capability
- Autonomous, remote or local navigation control modes
- Automated berthing / unberthing with near-field sensors
- Station keeping capability
- Integrated operator control station (operation planning, control, monitoring, data analysis, debriefing and report generation)
- NERVA Ship Management and Sensemaking System (SMS) for propulsion and auxiliary systems
- Sensemaking capabilities:
  - Predictive Diagnostics (PD)
  - Condition-Based Maintenance (CBM) and
  - Decision Support System (DSS)
- Integrated payloads such as electro optical sensor, searchlight and Long Range Acoustic Device (LRAD)

Applications
- Harbour patrol & port security
- Maritime emergency
- Fire fighting
- High value asset escort

HIGH SPEED TRANSPORT VESSEL (SWIFT USV 50)

Key Features
- High speed catamaran hull form with good seakeeping performance
- Fuel-efficient cruising speed
- Large payload deck with automated cargo securing system
- Automated berthing / unberthing with near-field sensors
- Station keeping capability
- COLREGS-based autonomous manoeuvring
- Collision Detection and Collision Avoidance (CDCA) capability
- Autonomous, remote or local navigation control modes
- Integrated operator control station (operation planning, control, monitoring, data analysis, debriefing and report generation)
- NERVA Ship Management and Sensemaking System (SMS) for propulsion and auxiliary systems
- Sensemaking capabilities:
  - Predictive Diagnostics (PD)
  - Condition-Based Maintenance (CBM) and
  - Decision Support System (DSS)

Applications
- Fast offshore supply vessel
- Time critical cargo transport
- Island group feeder transport
## SWIFT UNMANNED SURFACE VESSEL (USV)

### Principal specifications

<table>
<thead>
<tr>
<th></th>
<th>Length</th>
<th>Breadth</th>
<th>Draft</th>
<th>Speed</th>
<th>Range</th>
<th>Displacement</th>
<th>Pump Capacity</th>
<th>Nozzle throw</th>
<th>Mode of control</th>
<th>Communication</th>
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<td>Length</td>
<td>9.3m</td>
<td>3.5m</td>
<td>0.5m</td>
<td>Up to 30knots</td>
<td>Up to 150NM</td>
<td>4.3t</td>
<td>700V/min @ 8 bar</td>
<td>40m</td>
<td>Remote or autonomous</td>
<td>Datalink antenna</td>
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<td>2.5m</td>
<td>0.5m</td>
<td>18knots</td>
<td>3h at 6knots</td>
<td>7t</td>
<td>0-2pax</td>
<td>Local, remote or autonomous</td>
<td>Datalink antenna</td>
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<tr>
<td>Length</td>
<td>18m</td>
<td>3.8m</td>
<td>0.7m</td>
<td>Up to 55knots</td>
<td>Up to 500NM</td>
<td>Up to 100t on 25m x 12m cargo deck</td>
<td>422t</td>
<td>0-4pax</td>
<td>Local, remote or autonomous</td>
<td>Datalink antenna and satellite</td>
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<td>Length</td>
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<td>Up to 35knots</td>
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