The SEA-KIT H-Class USV's highly configurable design, with a retractable gondola and dual sensor deployment options, is based on a wealth of operational data and feedback collected from the company's proven and established X-Class USVs.

As well as increased power, seakeeping and fuel capacity, the vessel has a composite hull, reducing the ship's weight with the resulting fuel saving and endurance benefits. Active stabilisers minimise roll and improve data collection quality. The new H-Class design also further reduces surface and subsurface noise and vibration. Reduced risk to personnel as well as significantly decreased costs and environmental impact remain an integral aspect of the H-Class – SEA-KIT's latest step towards the company's ultimate zero emissions goal.

Enhanced design development means that this vessel offers flexible operational parameters. It can accommodate a variety of sensors in its retractable gondola, such as a Single or Multi Beam Echo Sounder or a Sub Bottom Profiler. In addition, the USV can deploy a tow cage, SVP, MAPR, CTD and towfish/side scan sonar for successful deepwater and nearshore bathymetric and hydrographic survey missions.

The SEA-KIT H-Class is designed to MCA Category 0, ensuring over-the-horizon endurance capability. Its increased endurance means that multiple missions can be undertaken without the need for frequent returns to shore for refuelling.

SEA-KIT USVs are controlled using SEA-KIT's proprietary G-SAVI control and surveillance platform, which provides safe and secure operation from remote control centres. Data can be transmitted via broadband link or satellite following on-board processing and compression or stored on-board for future retrieval.

The SEA-KIT H-Class design will hold Unmanned Marine Systems certification from Lloyd's Register as well as Lloyd's Register approval for design and hull construction.

**KEY BENEFITS**
- Composite hull for higher transit & survey speeds
- Active stabilisers to minimise roll
- Retractable gondola
- Dual sensor deployment options
- Safer, reduced risk, low environmental impact offshore operations
- Commercially proven technology with extended endurance & full ocean capability
- Highly configurable payload options
- Acoustically quiet operation
- Lloyd's Register Unmanned Marine Systems certified & COLREGS compatible
- On-board processing capability, including ATR & data compression
OPERATIONAL CAPABILITIES

The SEA-KIT H USV is designed to support a wide range of maritime operations and is highly configurable.

SEA-KIT H

The **SEA-KIT H** includes a multibeam echosounder, station holding and winch deployed sensor payloads to deliver versatile ocean survey capability. The extended endurance and robustness of the H-Class allows for hydrographic surveys many miles from port or mother ship.

Sensors already successfully deployed on other SEA-KIT USVs operating commercially in the Indian Ocean, North Sea, Red Sea and Pacific Ocean include:

- EM304
- EM2040
- EM710
- NORBIT WINGHEAD
- MAPRs
- SBP
- CTD/SVP
- SIDE SCAN SONAR

Equipment installed can be varied subject to request and approval.
## VESSEL SPECIFICATION

<table>
<thead>
<tr>
<th></th>
<th>12m</th>
<th>15m</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LENGTH OVERALL</strong></td>
<td>11.98</td>
<td>14.95</td>
</tr>
<tr>
<td><strong>BREADTH</strong></td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>HEIGHT (FROM WATERLINE)</strong></td>
<td>7.12</td>
<td>7.12</td>
</tr>
<tr>
<td><strong>OPERATIONAL DRAFT GONDOLA RETRACTED</strong></td>
<td>0.95</td>
<td>0.95</td>
</tr>
<tr>
<td><strong>OPERATIONAL DRAFT GONDOLA EXTENDED</strong></td>
<td>2.00</td>
<td>2.00</td>
</tr>
</tbody>
</table>

**12m VESSEL MAST AND GONDOLA CAN FIT IN A 40FT CONTAINER FOR EASE OF TRANSPORT**

**DYNAMIC STABILISATION SYSTEMS TO AVOID NOISE IN READINGS**

| **MAX DISPLACEMENT** * | 7.5  | 11.5  |
| **ENDURANCE @ 6kts** * | 23   | 39    |
| **HULL CONSTRUCTION**  | Composite | Composite |
| **MAST CONSTRUCTION**  | Composite | Composite |
| **PROPULSION**          | 2 x 25 kW / 1200 rpm | 2 x 25 kW / 1200 rpm |
|                         | 1 x 12 kW / 2000 rpm | Directional thrusters |
|                         | 1 x 12 kW / 2000 rpm | Azipod thruster |
| **BOLLARD PULL**        | TBC  | TBC  |
| **LOITERING CAPABILITIES** | 8    | 8     |
| **MAX SPEED**           | 10   | 9     |
| **OPERATIONAL SPEED**   | 6    | 6     |
| **RANGE @ 6kts** *      | 3,300 | 5,600 |
| **FIXED FUEL CAPACITY** | 2,500 | 5,000 |

**COMMUNICATIONS**

- Vessel control and monitoring via the purpose-built G-SAVI package
- SEA-KIT Autopilot system, Remotely controlled VHF & DSC system with two-way onboard sound feed
- Wi-Fi, Radio, Satellite (Iridium and Inmarsat) and Kongsberg Maritime Broadband Radio
- Multiple internal and external cameras, 1 pan-tilt-zoom thermal imaging camera
- Multiple Satellite data communication options with seamless data switching
- CCTV

**COMPLIANCE**

- Lloyd’s Register Class
- COLREGS Compatible
- COLREGS
- MCA MGN 280 (Operations)

**SELF RIGHTING**

- YES

* Values will depend on the operational profile

**CERTIFICATION**

The SEA-KIT H Class design will hold Lloyd’s Register Unmanned Marine Systems certification. The SEA-KIT hull design will be certified by Lloyd’s Register.

**CONTACT US FOR INFORMATION ON THE SEA-KIT XL CLASS (18M)**
REDEFINING THE WAY WE WORK OFFSHORE

SEA-KIT International is a British SME providing hi-tech, robust USV solutions for nearshore and over the horizon deployment. The company is sharply focused on driving down the cost of geo-data collection and reducing the sector’s carbon emissions. Since Shell Ocean Discovery XPRIZE success in 2019, SEA-KIT USVs have achieved numerous world firsts and are now deployed around the world on commercial projects.

G-SAVI – A VIRTUAL HELM FOR REMOTE USV CONTROL

G-SAVI is SEA-KIT’s proprietary, purpose-built virtual helm station. Numerous software elements interact with onboard systems, allowing the vessel operator to:

- Take direct control of the vessel’s autopilot and access all features, including multiple control modes
- Access full admin control through various levels of operator user accounts
- Monitor the connection state of all systems onboard the vessel
- Switch power to all onboard systems and control their function
- Monitor machinery, environmental and vessel health data and easily recall data from any point in time.

G-SAVI can be easily customised to control additional equipment. It also incorporates the vessel’s numerous redundancy features and can be installed on most standard desktop computers for the control of USVs located anywhere in the world.

First Uncrewed Offshore Pipeline Inspection in 2019

- 22 offshore pipelines inspected
- 175 175km of pipe surveyed
- 100 Up to 100km from shore
- 6 days offshore operation
- 0 risk to personnel with no crew onboard

First Uncrewed Offshore Transit in 2019

- 22 hour transit in busy shipping lane
- 5% fuel consumption compared to crewed vessels
- 2.5 Only 0.2% of 2.5 tonne payload capacity used
- 1 shipping container needed to deploy USV globally

Uncrewed Atlantic Survey Mission in 2020

- 22 days offshore
- 1.5 billion data points gathered
- 24/7 remote operation from UK control centre
- 1200 1200+nm travelled
- 1000 1000+km² ocean floor mapped

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