SEA-KIT

Photo: Rich Edwards, ENP Media

SEA-KIT INTERNATIONAL
SEA-KIT X USV

SEA-KIT X is a remotely controlled, versatile and configurable mother-ship platform that can launch and recover remote vehicles such as large AUV/UUVs or ROVs, enabling missions including deep-water bathymetry, offshore and subsea asset inspection and hydrographic survey with reduced risk to personnel, significantly decreased costs and lower environmental impact.

The SEA-KIT X USV's large payload capacity, long range and proven, over-the-horizon endurance capability means that multiple missions can be undertaken in a solo capacity or as part of a larger fleet of crewed or uncrewed vessels. Data can be transmitted via broadband link or satellite following on-board processing and compression, or stored on-board for future retrieval.

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.

The SEA-KIT X class design holds Unmanned Marine Systems certification from Lloyd's Register.

Photo: Fugro

KEY BENEFITS

- Safer, reduced risk, low environmental impact offshore operations
- Commercially proven technology with extended endurance & full ocean capability
- Fully uncrewed launch & recovery of underwater vehicles & sensors
- Highly configurable payload capacity
- Acoustically quiet operation
- Lloyd's Register Unmanned Marine Systems certified & COLREGS compatible
- On-board processing capability, including ATR & data compression

- Remote operation from secure location anywhere in the world
- Multiple mission & offshore payload variations
- Optional AUV/UUV & ROV configurations
- Ocean depth multibeam echo sounder variant

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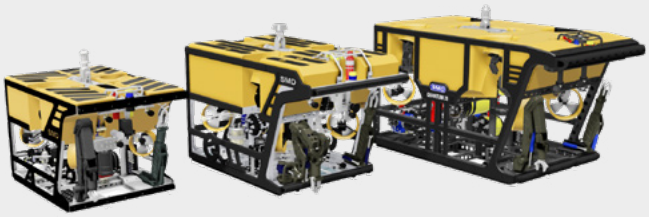
OPERATIONAL VARIANTS

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

OPTIONS INCLUDE

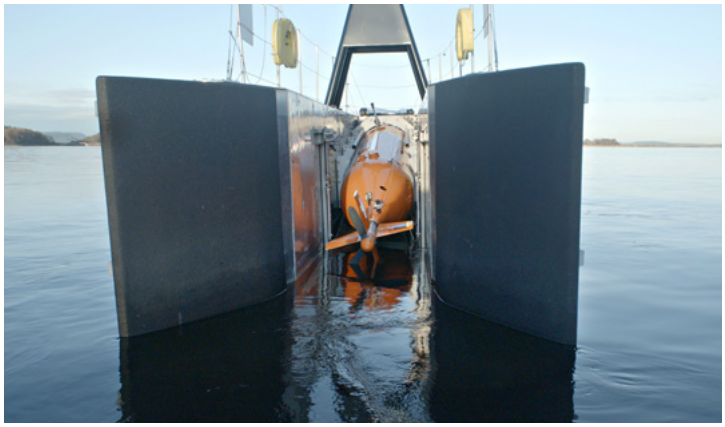
- **F FATHOM with MBES package**
- **S STEADFAST with station holding package**
- **V VIGILANCE with maritime security package**
- **T TRANSPORTER with launch & recovery package**

E.G. SEA-KIT X FST



The **SEA-KIT X FST** includes a multibeam echo sounder, station holding and underwater vehicle launch and recovery packages to deliver versatile ocean survey capability. When equipped with a swarm of AUV/UUVs, large areas of the ocean can be surveyed by the vessel and its assets fully autonomously. The extended endurance and robustness of the X Class allows for surveys many miles from port or mother ship.

E.G. SEA-KIT X S



Variations of sub-categories available on request

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VESSEL SPECIFICATION

LENGTH OVERALL	11.75	metres
BREADTH	2.2	metres
HEIGHT (FROM UNDERSIDE OF GONDOLA)	8.45	metres
OPERATIONAL DRAFT *	0.72	metres
MAX DISPLACEMENT *	11.2	tonnes
PAYLOAD	2	tonnes
ENDURANCE *	14	days
AUV VARIATIONS	1 x HUGIN	or equivalent
ROV VARIATIONS	1 x 350	kg
HULL CONSTRUCTION	Aluminium	
MAST CONSTRUCION	Aluminium	
PROPULSION	2 X 10 kW / 1200 rpm	electric directional thrusters
	1 X 12 kW / 2000 rpm	Azipod thruster
BOLLARD PULL	TBC	
LOITERING CAPABILITIES	Beaufort 7	
MAX SPEED	6	knots
ENDURANCE SPEED	3	knots
OPERATIONAL SPEED	4	knots
RANGE *	2,500	nm
FIXED FUEL CAPACITY	2,000	litres
OPTIONAL ADDITIONAL FUEL	3,000	litres
COMMUNICATIONS	Vessel control and monitoring via the purpose-built G-SAVI package	
	Remotely controlled VHF & DSC system with two-way onboard sound feed	
	Wi-Fi, Radio, Satellite (Iridium and Inmarsat) and Kongsberg Maritime Broadband Radio	<45 km offshore
	Multiple internal and external cameras, 1 pan-tilt-zoom thermal imaging camera	CCTV
	VSAT optional for over the horizon capabilities	
COMPLIANCE	Lloyd's Register	Class
	COLREGS	Compatible
OPERATIONAL ENVELOPE	Multiple worldwide control stations	Cat-0 Unrestricted
	SSC	(Hull construction)
	MCA MGN 280	(Operations)
SELF RIGHTING	YES	

*** Values will depend on the operational profile**

CERTIFICATION

The SEA-KIT X Class design is patented and holds Lloyd's Register Unmanned Marine Systems certification.
The SEA-KIT hull designs are certified by Lloyd's Register.

SEA-KIT

SCAN TO WATCH THE SEA-KIT STORY SO FAR

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.

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.

FIRST INTERNATIONAL COMMERCIAL UNCREWED 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

FIRST UNCREWED OFFSHORE PIPELINE INSPECTION IN 2019

4 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

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+km^2 ocean floor mapped

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