



DRIX, USV FOR GEOSCIENCES AND ENERGY MARKETS

iXblue

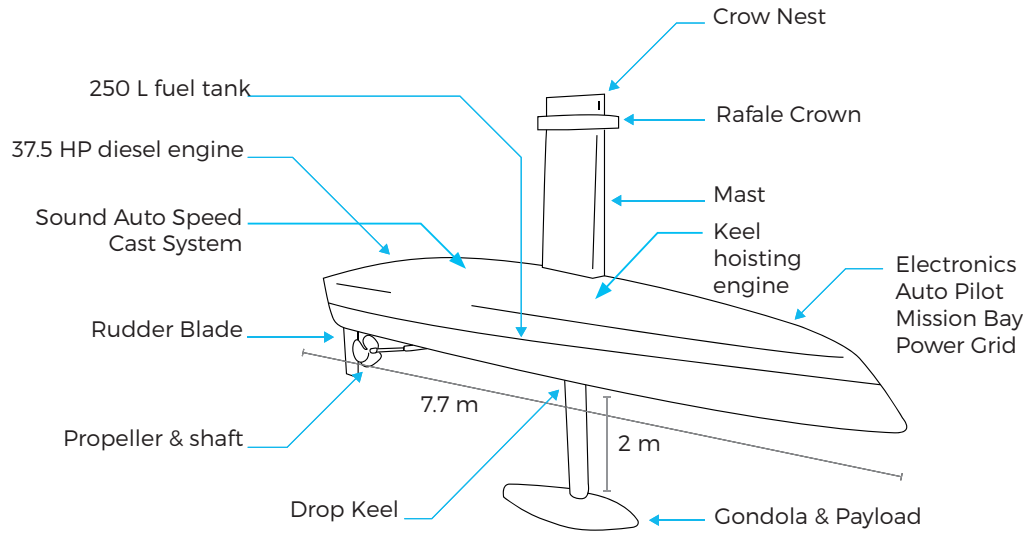
A SEASONED OFFSHORE-GOING USV IN OPERATION SINCE LATE 2017

DriX has been operating with major Energy and Survey companies (operators and contractors) for over a year. DriX can conduct operations with a reduced crew. Fitted with an iXblue autopilot, a Collision Avoidance System and with an HSE mindset, it can operate on windfarms or within rigs 500 yards exclusion zones. Its endurance ranges from 24 hours at 14 knots (top speed), to 10 days at 4 knots. Its highly hydrodynamic shape allows DriX to conduct surveys up to sea state 5. Its Launch&Recovery System (DDS), fully automatic, allows for swift and safe deployments.

Overall, the data collected is better and the work done faster than with traditional survey assets.

Coupled with iXblue products or third-party sensors, it smartly provides full solutions for getting the job done, and truly improves margins.

MAIN FEATURES



DESIGNED FOR DATA GATHERING

- Excellent platform stability for data acquisition, even at high speed (10+ knots)
- Payload located in a gondola, two meters under the surface, in a noise-reduced and bubble-free environment
- Data-sharing through various communication solutions (MBR, WiFi, SATCOMS)

AND VERSATILE APPLICATIONS

- Design optimized for both coastal and offshore missions
- Modular gondola architecture able to accommodate various payloads
- Third-party compliant platform



Figure 1: T50 dual head

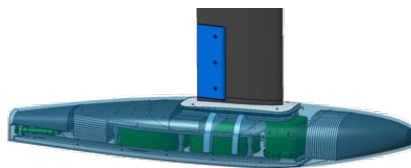


Figure 2: EM 2040C dual head

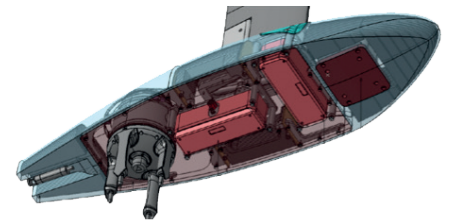


Figure 3: Gaps USBL + EM 2040

Examples of various gondolas shapes and sizes

AN OPEN AND SENSOR AGNOSTIC PLATFORM

As an iXblue product, DriX is a third-party compliant platform. It can be fitted with a number of payloads depending on its application. The following sensors have been integrated following customers demands:

- Kongsberg 2040 and 2040C (dual head on line) Multi-Beam EchoSounder (MBES)
- Teledyne RESON T50 dual head MBES
- R2SONIC 2024 and 2026 MBES
- iXblue Ramses LBL
- iXblue Gaps USBL
- OceanTech Side Scan Sonar (SSS)
- iXblue Echoes series sub-bottom profiler (SBP)
- iXblue SeapiX volumetric 3D sonar

DriX is also capable of towing an active depressor which can maintain its altitude.

DRIX DEPLOYMENT SYSTEM (DDS): A FUNCTIONAL LAUNCH AND RECOVERY SYSTEM

- A floating cradle attached to the support vessel, used from DriX launch and recovery system
- Certified by Bureau Veritas under the « Loose Gear & Lift Accessory » section
- Deployed from a davit, a crane or an A-frame
- Also acting as a protective shelter for DriX which can be fully maintained when inside
- Fitting on a davit, a workdeck, or wooden deck support provided with DriX



DriX inside the DDS, special transportation container in the background

ARTIFICIAL INTELLIGENCE CONTROL

FROM AUTONOMOUS MISSIONS

DriX conducts autonomous operations thanks to pre-entered plans into its mission software (Quinsy or any other mission software). The mission can also be changed live whilst DriX is at sea.

TO MANUAL MODE

Deployed from a shore or from a vessel at sea, DriX carries out a number of missions with one supervisor/mechanical and one (12hours shifts) or two (24 hours shifts) surveyors.

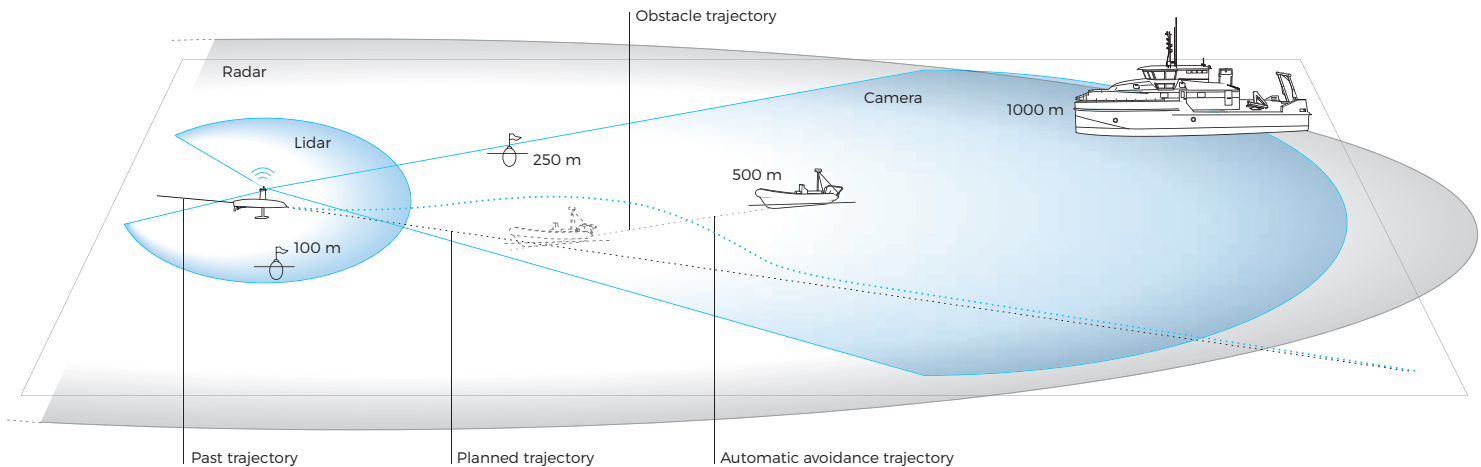
During the mission, the pilot is on standby. He receives any potential alarm originating from DriX and can decide to override the system by taking over manual control through a remote.

The operational range is given by the communication means (from 0 to 20km for non-SATCOMS) from the controlling asset.

ADVANCED AUTONOMY AT SEA POWERED BY ARTIFICIAL INTELLIGENCE

- PLAN module: Setting-up mission scenarios within the dedicated MMI
- SENSE module: Providing robust navigation information for obstacles detection and avoidance
- DRIVE module: Executing all planned sequences and reacting to the information sent by the Sense module

A sea-proven solution reducing human risk and drudgery, and which enables safe and reliable vessel deployment from launch and recovery to mission's execution.



MISSIONS

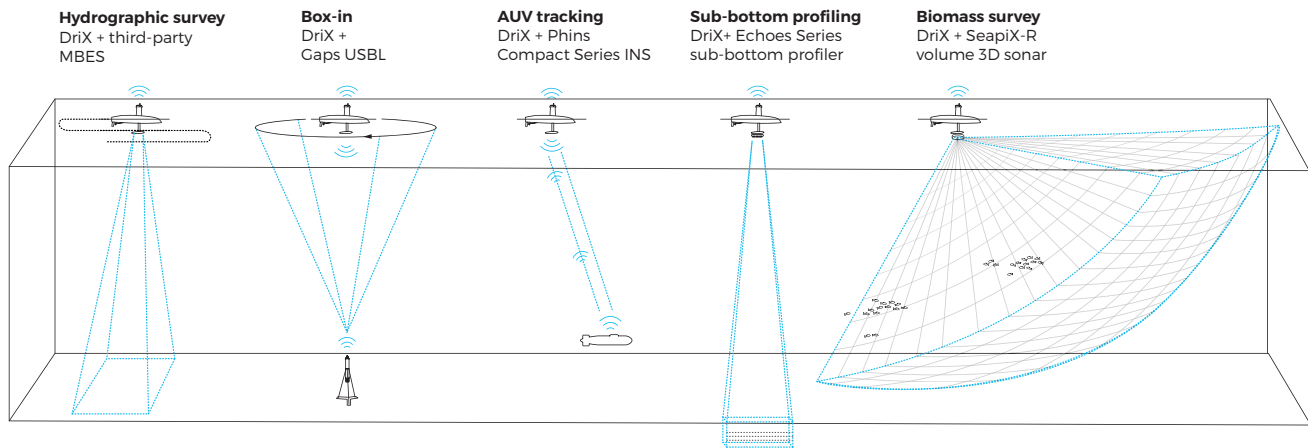
ENERGY (OIL & GAS, RENEWABLES)

- Cables, pipelines, pre- and as-laid surveys
- Touch-down monitoring
- Inspection, maintenance and repair (IMR): communication gateway
- Subsea positioning: box-in, AUV tracking
- Wind LIDAR measurement

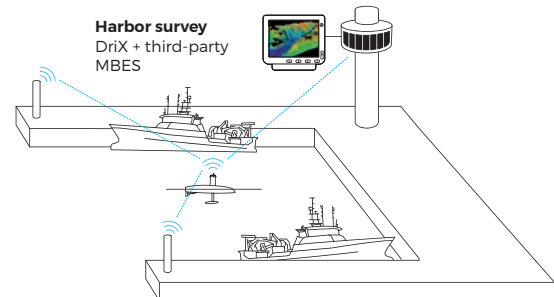
GEOSCIENCES

- Sub-bottom profiling
- Area clearing
- Seabed mapping
- Biomass survey
- Harbor survey and emergency disaster relief

DriX can perform a wide range of missions depending on its payloads.



For all these missions, DriX acts as a communication gateway between the sensors and the control station.



iXblue at a glance

30
YEARS OF
EXPERIENCE

140+
MILLION EUROS
OF TURNOVER

80%
OF TURNOVER
ACHIEVED ABROAD

650+
EMPLOYEES

200+
PRODUCTS

20%
OF TURNOVER
REINVESTED
EACH YEAR IN R&D

**WORLDWIDE
PRESENCE**

DELIVERING OVER
500
CUSTOMERS
EVERY YEAR

24/7
TECHNICAL
SUPPORT

DRIX AND DDS MAIN SPECIFICATIONS

DriX

Length overall	7.710 [m]
Breadth overall	0.824 [m]
Light weight	1 380 [kg]
Fuel capacity	250 [L]
Propulsion	Single Diesel engine
Navigational draft	2.00 [m]
Height from bottom of gondola to top of mast (including antennas), drop keel extended	4.76 [m]
Height from bottom of gondola to top of mast (including antennas), drop keel retracted	3.66 [m]
Drive	1 x Straight shaft with 1 x fix pitch propeller
Hull type	Mono hull
Hull material	Glass / Composite with Kevlar coating
Superstructure material	Glass / Composite

DriX Deployment System (DDS)

Displacement	1 500 [kg]
Length overall	8.790 [m]
Breadth overall	2.200 [m]
Height (DriX inside, lifting hoop folded)	3.810 [m]
Propulsion	None
Total weight (DriX + DDS)	3 100 [kg]
Diesel tanks (for DriX Replenishment At Sea)	250 [L]
Lifting methods	- 1 single central lifting point - 2 lifting points (rear lifting hoop and bow pad eye)
Communications	2 Wifi antennas (port and starboard sides) on the aft part
Positioning	2 GPS antennas on the DDS axis, above the fore cabinet
Hull material	Glass / Composite / Rubber
Power	24V battery