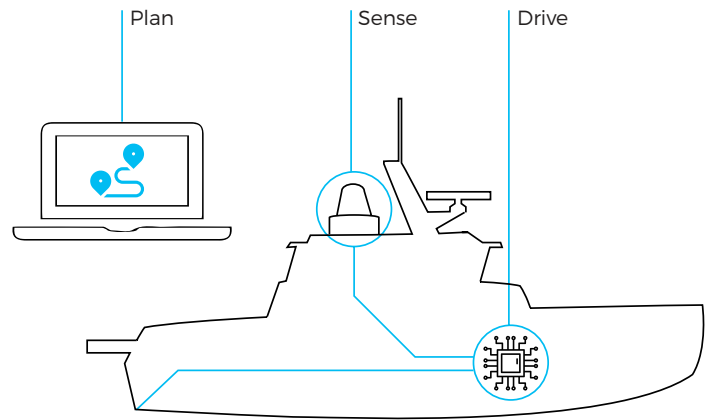


Manta-DroneKit

Autonomous kit for
Unmanned Surface Vehicles

Based on a multi-sensor perception, the USV autonomous kit provides advanced positioning and guidance in maritime environments.



ADVANCED AUTONOMY POWERED BY ARTIFICIAL INTELLIGENCE

PLAN Module:

- Nautical charts display
- Definition of geometric shapes
- Graphical tasks assignment wizard
- Payload settings

SENSE Module:

- Global GNSS localization
- Multi-sensors awareness
- Perception and navigation data fusion
- Obstacles detection

DRIVE Module:

- Mission execution engine
- Guidance and platform control
- Payload management
- Security management

BENEFITS

Platform independent:

- Tailored to customer's needs or requirements
- Open interface to platform apparatus (sensors and actuators)
- Platform dynamics included into control algorithms
- Flexible footprint

Advanced platform behavior:

- Safe autonomous or remotely controlled motion
- Infinite range of scenarios (free paths and speeds)
- Reactive obstacle avoidance

Support by robotics experts:

- Customer assistance to architecture design
- System integration & commissioning
- On-site configuration
- Technical assistance

Sea-proven:

- Core of DriX (iXblue USV) autonomy
- Reduced human risk factor and drudgery
- From launch and recovery to mission's execution.



SPECIFICATIONS

Main performances	Positioning: <0.1m with local correction +/-2m without local correction	Guidance: < 1m (typical cross track error)		
Kinematics	Fixed or controllable propellers Water jets Pods			
Processing Unit	Embedded GPU 190x130x80 cm 50W @ 9-60 VDC power supply			
Interfaces	Ethernet, CANOpen, J1939, NMEA2000, serial, ROS Custom protocols on demand Hypack, Qinsy, ECDIS, e-navigation import/export (GeoJSON, L84, WPX...)			
Sensors	3D LIDARs: Velodyne, Ouster	Thermal Camera: FLIR	Other: Radar, AIS, ENC	Position: INS, GPS
IMO COLREGs	Available: Part A - General Part B - Steering and Sailing	Coming soon: Part C - Lights and Shapes Part D - Sound and Light signals		
Algorithms	Multi-target Unscented Kalman filter Obstacle detection: Deep learning & Transfer Learning (proprietary data sets) Long term planning: Rapidly-exploring Random Tree (RRT) Short term planning: Genetic algorithm (customized genome)			
Option : Communication	WIFI, 4G LTE, Maritime Broadband Radio, High throughput Iridium (Certus)			
Option : Advanced autonomous motion	Automatic docking Follow master AUV/ROV companion Loitering patterns			

