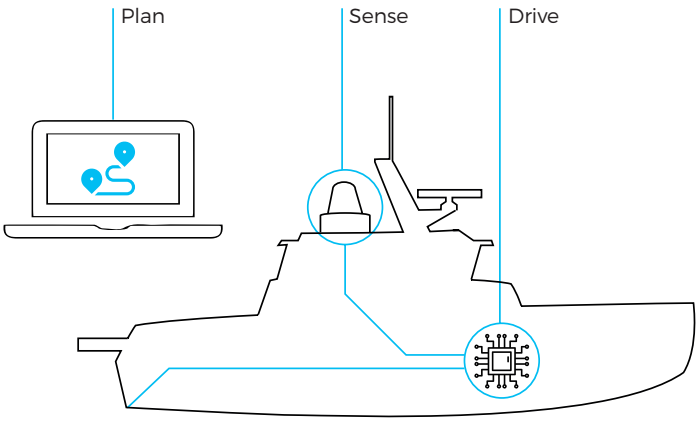
Cetos DroneKit

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.

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2020-03-DS-Cetos-Drone

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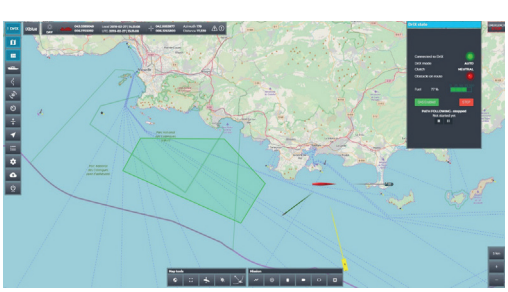
SPECIFICATIONS

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 mm 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			



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