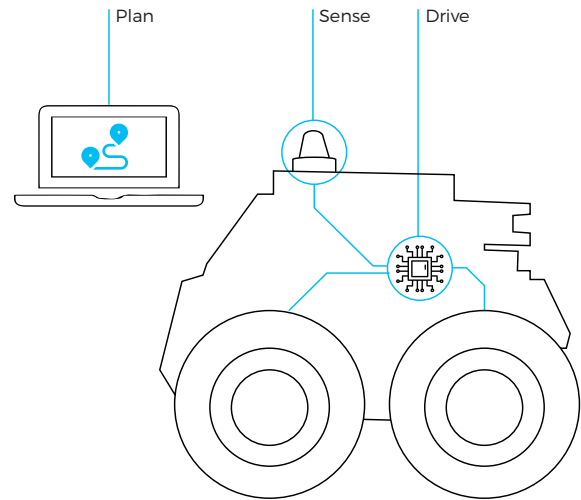


# Oryx-DroneKit

## Autonomous kit for Unmanned-Ground Vehicles

Based on a multi-sensor perception, the UGV autonomous kit provides advanced positioning and guidance for indoor and outdoor environments.



### ADVANCED AUTONOMY POWERED BY ARTIFICIAL INTELLIGENCE

#### PLAN Module:

- Land charts and LIDAR maps display
- Definition of geometric shapes
- Graphical tasks assignment wizard
- Payload settings

#### SENSE Module:

- Indoor / Outdoor 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

#### Industry proven:

- Tunneling, agronomy, warehouse
- Reduced human risk factor and drudgery
- From park position to mission's execution.



## SPECIFICATIONS

Main performances	Positioning: +/- 0.05m @2 $\sigma$	Guidance: < 0.1m (typical cross track error)	Indoor working area: 1000-5000 m <sup>2</sup>	Outdoor range: 1000+ m
Kinematics	Skid-steering Ackerman-steering (single and double) Mecanum wheels			
Processing Unit	Embedded PC 190x130x80 cm 15W @ 12-60 VDC power supply			
Interfaces	Ethernet, CANOpen, serial, ROS Custom protocols on demand SCADA & Fleet Management System friendly			
Sensors	2D & 3D LIDARs: SICK (including FlexiSoft tools) Velodyne, Ouster	3D Cameras: IFM, SICK, Intel, Zed	Position: INS, GPS	
Actuators	Ethernet, CANOpen, Analog Update: 10Hz	Odometry Update: 50Hz		
Algorithms	Graph-SLAM Long term planning: Probabilistic Road Maps (PRM) Short term planning: Dijkstra Motion: Pure Pursuit, Model Predictive Controller (MPC)			
Option : Communication	WIFI, 4G LTE			
Option : Advanced autonomous motion	Automatic docking Platooning Path discovery Terrain roughness analysis + adaptative speed			

