

The next level of robotics control software – powered by AI and machine learning.



# toolKITT

# Intelligent robotics control software.





## COMMANDER

Plan autonomous missions or control units directly from shore using web-based software. Commander is useful for direct command operations, as well as overseeing simple commands and objective missions. Telemetry provided by the robotic platform — as well as the setpoints, commands and missions sent to it — travel to and from Commander through Wavelink.

The application's Autonomy UI offers insight into the health and status of the autonomous missions being conducted by robotic units, and allows for operator intervention if necessary. The Commander Companion interface, meanwhile, performs autonomy-related calculations using platform telemetry and behavior trees, and delivers the resulting command setpoints to Helmsman.



## WAVELINK

Communicate securely and reliably through our proprietary acoustic transmission network. Wavelink establishes a connection to bridge the air-water barrier between topside operators and subsea units. It also utilizes a delay tolerant network — selecting the best channel from several simultaneous modes of communication — to ensure transmitted data reaches its proper endpoint.



#### **HELMSMAN**

Ensure safe, predictable operation of robotics out in the field. Helmsman is responsible for the primary control calculations of all robotics platforms, managing the safety and overall state of units to ensure command objectives are achieved.



#### WAYFINDER

Map and model the subsea environment for improved mission planning and execution. Wayfinder models the world around a robotic unit by interpreting sensor inputs and providing relevant, processed data to control systems like Helmsman and Commander. Wayfinder bases many of its world model calculations on the vehicle odometry and state estimation it receives from Helmsman. It also utilizes neural networks to assist with object recognition and pose estimation.



#### **LOGGERHEAD**

Gather data and perform analysis to improve operations. Loggerhead provides data collection, visualization and reporting functionality, collecting diagnostic runtime data as well as any other data requested by the customer.