

**Capabilities of  
Open Unmanned Mission Interface  
(OpenUMI)**

**Defense Technologies, Inc.**

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### Acronym List

<b>Acronym</b>	<b>Definition</b>
<b>OpenUMI</b>	<b>Open Unmanned Mission Interface</b>

## Introduction

DTI desires to market the software development that has occurred over the past 3 years in developing the original software product called Murc. DTI's plans to leverage off the original software development to produce a software product called OpenUMI. The OpenUMI product will be marketed towards the unman vehicles of the military.

## Scope

This document attempts to capture, in a single location, all the features of the OpenUMI product. This is intended to be a living document, updated as new features are added and old features are deprecated.

## OpenUMI Features

- Standards Support
  - Capable of support a nearly unlimited number of communications standard and protocols
  - Support exists for STANAG 4586 v2.5
  - Support exists for the very latest JAUS ETG
  - Logs all traffic to and from each standard
  - Supports Passing of Custom User Events
- Mapping
  - Vector Product Format
    - Digital Nautical Charts
  - Raster Product Format
    - CADRG Products
    - GeoTIFF
    - JPG with World File
    - BMP with World File
  - Sophisticated VPF Map Management
    - Create, Edit, and Remove Feature Sets
    - Compose Feature Sets from individual features or other features sets
  - Specify Active Zoom Levels for each Mapping Type
- User Interface
  - Highly Configurable - 48 Unique Configuration Items specifically controlling the User Interface
  - Developed with Human Factors testing of Multiple Unmanned Vehicle Systems in mind
  - Intuitive, Video Game Like Interface
  - On-Screen Coordinate Display
    - Latitude / Longitude
    - UTM
  - On-Screen Map Scale Display
  - Configurable Vehicle Representations
    - Can have common representation for all vehicles

- Can display unique icons based on domain
  - Can display unique icons based on vehicle type
- Zero Click Access™ to Highly Critical Information
- Drill down access to important, but lower priority data
- One Click Vehicle Centering
- Vehicle Highlighting
- Can be configured to be used with large scale displays and small hand held displays.
- User Interface can be fully customized using a pluggable look and feel.
- User Interface can be reconfigured to support single mouse button type operations
- Open Source Model allows users to customize the interface beyond the limits of the configuration items!
- Alert visible for time defined by Alert
- Configuration
  - All options can be configured in a configuration file
  - Many options can be reconfigured dynamically
  - Can completely specify Default Routes in configuration file
  - Can specify Operational Areas in configuration files
  - Cross Platform
- Managing Vehicles & Assets
  - Asset Repository shows all assets available for connection
    - Displays Common Name of Asset
    - Displays Model Name of Asset
    - Displays Asset ID
  - Asset Repository shows allowable access levels for connection
  - Can be configured to automatically connect to monitor all vehicles
  - Can be configured to automatically connect to control all vehicles
  - Allows user to specify manual connection to assets
  - Automatically Discovers vehicles on network
- Command & Control
  - Handles Basic Modes of Flight
    - Mission / Waypoint Mode
    - Loiter Mode
    - Vector Mode
    - Launch
    - Recover
    - Standby
  - Handles Full Mission Termination Sequence
  - Provides means for simple and advanced route editing
  - Allows Loiters to be added to waypoints
  - Allows Vehicle Actions to be added to waypoints
    - Data Link Actions
    - Light Actions
  - Drill down capability for advanced vector mode control

- Facilitates cooperative control between standards!
- Quick-Routing
  - Simple, point-and-click route drawing interface.
  - Route Editor allows high level route and waypoint editing
  - Waypoint Editor allows detailed waypoint editing
  - Click to Reverse Route Option
  - Click to Set Route Entry Point
  - Create Looped or Open routes by default
  - Route Lockout – Prevents routes from being edited while vehicles are active tasked to it
- Flight Vectoring
  - Mid-level “knobs” mode
  - Drive the vehicle with a mouse or with a Joystick
  - Intuitive, on-screen interface with integrated control
- Vehicle Specific Interoperability
  - Can view vehicle specific data in integrated Web Browser
  - Allows Operator to get detailed information on Alerts
  - Allows Operator to interface with Launch & Recovery Systems
- Payload Support
  - Support Command & Control of Common EO/IR Type payloads
  - Displays Video Streams from Payloads
- STANAG 4586
  - Implemented through Version 2.5
  - Web Enabled Implementation
  - Pre-Integrated with DTI’s Vehicle Tool Kit (VSM Development API)
  - Support for Vehicles Spontaneously Assigning Control to a Control Station
- JAUS
  - Current to the latest ETG plans.
  - Only OCU to support Local Mission Spooling
  - Teleop Control