

# Software & Feature Updates



November 14<sup>th</sup>, 2008

## Kestrel™ Autopilot: firmware version 8.3

- **TASE Gimbal Support** - Ability to use the TASE gimbal with the same functionality provided by other supported gimbals including manual drive, gyro-stabilized mode, and GPS pointing modes.
- **Aerius Photonics Laser Range Finder Support** - Support added for the small, lightweight Aerius Photonics laser. Used as a ground sensor, the laser range finder adds terrain following capability as well as improved landing accuracy.
- **Improved Landing Accuracy** - Improved landing accuracy through vector path following and pitch feedforward capability.
- **Flaps / Flaperons** - User configurable for flaps and flaperons
- **Landing Gear Support** - Landing gear retracts and nose wheel control
- **Greater MSL Support** - Improved ability to incorporate and use MSL altitude or Height Above Launch.
- **Freewave Modem Support** - Freewave modems added to list of radios supported
- **Deep Stall Capability** - Support for deep stall landings and user-triggered deep stall with fixed pitch capability.
- **More Servo Channels** - Support for up to 12 PWM channels using the Servo Expansion Board.
- **Waypoint Servo Capability** - Automatically trigger a servo when the aircraft reaches a specified waypoint.
- **More Auxiliary Servo Functionality** - payload dropping, parachute deployment, gimbal bay doors.
- **Catapult Launch Capability** - Aircraft can now be configured to turn on throttle automatically during takeoff when an acceleration threshold is reached. This allows for safe, autonomous catapult launches.
- **Safe UAV Mode** - throttle is guaranteed to be off and servos undergo less stress in this mode intended for use on the ground or in transport.

## Virtual Cockpit™: version 2.5

- **Mission Simulator** - Embedded in the Virtual Cockpit is a powerful simulation and mission control tool called the Mission Simulator (MIS). This tool allows Virtual Cockpit operators to be trained without putting expensive hardware at risk. It also allows for multi-agent and single agent mission scenarios to be tested in the safety of a simulation environment built into the Virtual Cockpit.
- **Added Waypoint Functionality** - Routes can be constructed more easily with GoTo waypoints; Search areas can be automatically covered with waypoint paths with the simple drag of the mouse; Waypoints added more easily by Ctrl-left-clicking, greatly speeding up path planning.
- **Map Maker Utility** - New visual application for making maps for Virtual Cockpit. Interfaces with Google Earth and automatically generates map file. Launchable from Virtual Cockpit.
- **Terrain Data Support** - Support for SRTM and DTED Terrain Data built in to Virtual Cockpit. VC notifies aircraft of its local height above ground and reports this to user. Minimum HAG failsafe provided for aircraft.
- **Flight Summary Recording** - Virtual Cockpit now stores a flight log for each flight automatically for data retrieval and troubleshooting.
- **New Virtual Cockpit HTML Help** - HTML Help is now available in addition to all of Procerus' documentation manuals. Hitting F1 from any VC screen pulls up applicable help for that window.
- **Enhanced Coordinate System Support** - UTM, MGRS, and Lat/Lon fully supported. Improvements made to units display - Metric, English, and Nautical units now fully supported.
- **Camera Controls** - Change zoom, iris, gain, and shutter settings on the Sony Zoom Cameras.

- **New Payload Control Screen** - Control payloads such as the Aeries Laser Range Finder through the payload control window.
- **Flaps Scrollbar** - Adjust flaps in the right pull-out menu of Virtual Cockpit.
- **Improved MSL Support** - Switching between Height-Above-Launch and MSL Altitude better supported with waypoint checks implemented to prevent dangerous altitude settings.
- **Video Channel Selection** - Video channels can be tied to specific agents and automatically switched when a new agent is selected if a video switch is installed in the Commbox.

## OnPoint™ Targeting: version 1.3

- **Improved User Interface**
- **Better Stylus Functionality** - different clicking options now selectable using buttons rather than just keyboard shortcuts
- **Tracking Modes exposed** - Track moving and non-moving targets using different modes by simply clicking on the appropriate button. Also, adjust tracking sensitivity for better control of tracking algorithm.
- **Change UAV Mode From OnPoint** - Any of the UAV modes can now be selected directly from OnPoint
- **Digital and Optical Zoom** - Scrollbars added for both digital and optical zoom
- **Agent List Synchronized** - The agent list in Virtual Cockpit is now correctly synchronized with the list in OnPoint. Only agents available in VC are selectable.
- **Link Status Indicator** - Time since last telemetry received is now shown in OnPoint to verify that telemetry link is not compromised
- **Automatic Reconnection with Virtual Cockpit** - Upon closing and reopening Virtual Cockpit, OnPoint will automatically reconnect (rather than requiring a restart).