



VCSi Touch

Common Control for Unmanned Systems



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Overview

VCSi Touch is ground control station software that provides NATO interoperable command and control (C2) of Small Unmanned Air Systems (SUAS). This software is designed to be open and extensible, providing flexible options for UAS, radios and controller hardware. It operates the Lockheed Martin Indago and Condor SUAS and can also easily integrate with other systems that support NATO STANAG 4586 or MAVlink protocols. Interoperable with industry leading radios including Trellisware TW-650, Persistent Systems MPU5 Wave Relay™ and Silvus Technologies StreamCaster™, VCSi Touch allows operators to choose the radio that best meets their mission needs. This software operates on Panasonic Toughpads and other ruggedized tablets or laptops that utilize Microsoft Windows or Linux Operating Systems and works with controllers that have integrated or external joysticks controls.

- Highly Intuitive
- Easy to Learn and Use
- NATO Interoperable
- Open Architecture
- Adaptable to Unique System Requirements
- Proven in Tactical Operations
- Integration Ready



Your Trusted Partner in Unmanned Control

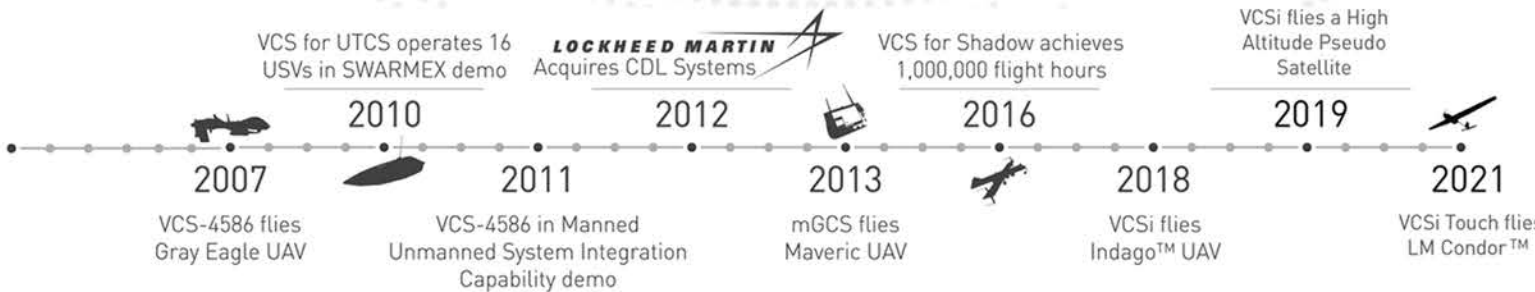


Lockheed Martin CDL Systems

Over nearly 30 years, Lockheed Martin CDL Systems' software products have provided over 2.5 million operational flight hours for our customers

Lockheed Martin CDL Systems specializes in the development, integration and application of unmanned systems for commercial, civil and military customers. Our primary focus is developing unmanned control software that helps operators be highly effective using unmanned vehicles and understand the data they gather.

We leverage international standards and design our software to run on commercial-off-the-shelf (COTS) hardware. This provides our customers with low lifecycle costs and long-term options for growth, sustainment and flexibility. Our software has been integrated with over 40 unmanned vehicle systems including propeller driven aircraft, jet target drones, helicopters, airships, high altitude pseudo satellites, hybrid aircraft, surface vessels and quadcopters. Our customers include the U.S. Department of Defense, the Canadian Armed Forces, the United Kingdom Ministry of Defence, a number of other defense organizations across Europe and the Middle East as well as a variety of commercial industries. The combined flight hours on our products exceeds 2.5 million.





Integrations:

Radios

Silvus, Microhard, Persistent Systems, TrellisWare®, Ubiquity and more

Payloads

Indago DuoPlus, Indago 30-33X, Indago Noctis, WESCAM MX™, AVT, Trillium HD, Piccolo™ TASE and more

Autopilot Protocols

MAVLink, MicroPilot®, Kestrel™ and Piccolo™

Transponders

FLARM, ADS-B

Ground-Based Sense & Avoid Radar

Canadian UAVS Sparrowhawk™ Radar

Joystick

Microsoft Xbox, Logitech, Atmel®, DirectInput, XWindows and more

System Specifications:

Microsoft® Windows® 10 or

CentOS 7 (or equivalent)

Intel® Core i5 CPU or greater

Intel® HD Graphics

8 GB DDR4 RAM (16 GB preferred)

Preflight

The Preflight Checks Wizard automates most preflight steps allowing you to start flying safely in less than 2 minutes from power up. Battery fail safe settings, min/max altitude limits and contingency behaviors can all be specified from a single intuitive screen. Once in flight, VCSi Touch allows you to stay focused on your mission by regularly loading return home paths to the UAS that have been deconflicted with terrain in the event of a communications loss.

Open Architecture

VCSi Touch is designed to be open and extensible so that it is easy to integrate new systems and best of breed capabilities. Vehicles, payloads and data links can be integrated using open standard protocols such as STANAG 4586 and MAVlink so that you are never locked into a single OEM. Third party developers can write VCSi Touch plug-ins that can customize the operator interface, integrate state of the art AI/ML algorithms, integrate with external battlefield managements systems and much, much more.



Flight Operations

Easily operate your UAS by tapping on the map to use automated flight modes such as loiter, waypoint and follow-me modes or utilize physical or virtual joysticks to operate in manual flight modes. Fly with confidence knowing that you will be alerted with visual and audible alarms if the system detects failures or conditions outside of your mission parameters such as approaching a no-fly zone or flying too close to another vehicle equipped with a FLARM or ADS-B transponder.



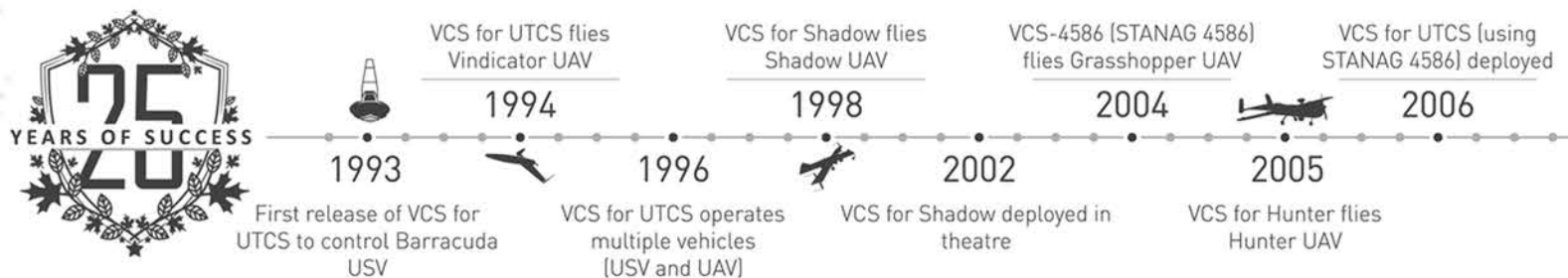
Sensor Operations

Tap on the video to point the camera to a new location or to start automatically tracking an object of interest. Take snapshots, engage the laser pointer, record video and export real-time critical information such as STANAG 4609 video, STANAG 4545 imagery and Cursor On Target (CoT) to other battlefield applications. For Manned-Unmanned Teaming (MUM-T) operations, hand over control of the sensor to another controller operating VCSi Touch or any other STANAG 4586 conformant controller.



Mission Planning

Plan like never before with a 3D map that supports numerous industry standard map/chart formats, 5-meter resolution terrain data, restricted airspace overlays, KML vector data and more. With internet access, you can easily download and store maps for your next operation with just a few taps. Easily plan flight routes or area searches that are always adjusted to keep a safe altitude separation, so that you can spend less time planning and more time on your mission.



Features at a Glance

Powered By:
PANTERRA
Mapping Engine™

Immersive 3D Mapping

Experience true context through our Panterra Mapping Engine™ for immersive 3D mapping with level of detail support.



Local Language Support

VCSi Touch's architecture supports the translation of the user interface into other languages, including non-latin scripts.

Online Map Database

Access a worldwide map database of both street and satellite layers from Mapbox™.

Mission-based Layouts

Easily toggle between 3 layouts, Big Map, Big Video, Full-Screen Video.

Map Layering

Control layering of your maps to display the most pertinent information at any time.

Optimized for Hand Controller Integration

Utilize the full functionality of your hand controller with the built-in joystick and auxiliary button support.

Multiple Coordinate Systems

Choose from over 30 datums in MGRS, UTM, DMS and DMM coordinate display formats.

Custom Annotation Tools

Annotate the map view with points, lines and polygons to designate areas and features of interest.

Easy Map Import

Import from hundreds of supported mapping formats including GeoTIFF and CADRG maps.

Map-centric Route Planning

Plan flight routes directly on the 3D map, in full context of surroundings. Flight routes are validated as they are edited.

Automated Look Ahead

Receive notifications well in advance if the vehicle is on a trajectory to impact terrain or to violate a keep-in or keep-out zone.

KML & GPX Support

Import and export polygons, points of interest, routes and annotations via either KML or GPX.

Extensibility and Software Development Kit

Whether it's a best-of-breed solution or a custom developed capability, use the SDK to extend the functionality of the system.

Contingency Planning

Plan and update contingency routes for emergency situations such as unintentional loss of link or propulsion.

Intuitive and Touch Friendly Controls

Easily navigate around the UI with larger glove friendly controls and pan around the 3D map using multi-touch control.

High Resolution Map and Terrain Support

Visualize your flight area in high detail with support for high-res maps and terrain resolution of up to 5m.

Restriction Zones

Define keep-in and keep-out zones to ensure the operator is aware of areas that are safe for flight.

Airspace Traffic Awareness

Use the ADS-B or FLARM integration to track and be notified of other aircraft and potential collisions.

Customizable Navigation Controls

Tailor VCSi Touch for each vehicle's capabilities, including speed and altitude limits and custom autonomous flight modes.

Warning Caution & Alert System

Monitor a unified location for audible alarms and notifications so operators can stay focused on the mission instead of scanning panels.

Comprehensive Mission Planning Tools

Plan routes and auto-generated area searches with detailed feature-rich tools that include built-in safety checks.

Network-centric Control

Monitor, control and handoff a vehicle to any VCSi Touch control station or to other STANAG 4586 stations such as VCSi.



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Lockheed Martin Canada CDL Systems

Harvest Hills Office Park, Building 5000.

Suite 5301 333 - 96 Avenue NE

Calgary, AB T3K 0S3

Contact: Juan Gomez

Phone number: 403.289.1733

Email: juan.r.gomez@lmco.com

PIRA: MAN202108002