

# PRST Software Suite

The PRST Software suite from ICS consist of four main components, all intended to facilitate the creation of a STANAG 4586 compatible UAV system. The STANAG (STANdardization AGreement) 4586 is a specification which will allow members of the NATO alliance to share command and control of their Unmanned Air Vehicles (UAVs). The STANAG 4586, entitled "Standard Interfaces of the Unmanned Control System (UCS) for NATO UAV Interoperability", is still within the ratification process. Our implementation is based on the latest release of the documents which is Edition 2.5.

## Base System

The PRST is a general ground Core UAV Control Station (CUCS) which also has the ability to control UGVs and UUVs. The system is not limited to only one vehicle at a time but can receive data from multiple vehicles in parallel thereby enabling it to combine data from several sources. The Graphical User Interface (GUI) is extendable and based on displays contained in DLLs. All displays can be resized and positioned individually to any configuration. Display configurations can be saved and automatically loaded. The GUI also allows displays to be positioned across multiple monitors. The number of monitors that can be used with the system is only limited by the Windows XP operating system which, without third party applications, supports up to 10 monitors. The PRST Base System supports up to interoperability level 4 (LOI) of the STANAG 4586, which means that it doesn't include launch and recovery of the UAV. According to the STANAG 4586 there are no generic messages for these procedures because they should be implemented using user defined messages.

## Mission Planner (Optional)

To support the creation of missions and tracks for Steering Mode "Waypoint" we have developed a separate application which makes use of the 3D Terrain Display and the Geographical Map. Each Mission is saved as a XML file and can be edited later. Included is an altitude graph which draws a terrain profile when 3D terrain database coverage is available.

- NATO STANAG 4586 compliance
- 3D visualization and Map displays
- Launch, Flight Director, Waypoint, Loiter & Landing mode displays
- Video Sensor display and control
- Joystick Input Control
- Subsystem Status Alert Alarm Panel with Alarm Text display
- Vehicle Instrument Panel for sensor readings and lights control
- Complete recording/replay capability of telemetry and video
- Ground Collision Warning System
- Remote Display Support (HTTP and JavaScript)
- Windows XP and Windows Vista compatible
- Linux and Mac OS coming soon



sales@instrumentcontrol.se - www.instrumentcontrol.se

Instrument Control Sweden AB - Kungsgatan 29 - SE582 18 Linköping - Sweden - Phone +46 (0)13 31 20 70

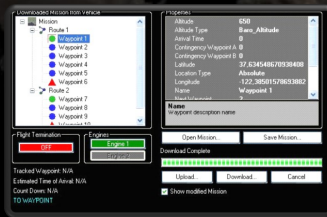
A full range of user displays which helps you get the most out of your UAV operator interface

## Steering Modes



### Flight Director

Control your vehicle through the Semi Autonomous mode using speed, altitude and heading as your primary inputs.



### Waypoint

Control your vehicle using predefined waypoint tracks and missions. Apply real-time waypoint editing.



### Loiter

Control your vehicle through a single mouse click. Additional inputs are speed and altitude.

## General Displays



### Georeferenced Map Display

Displays all connected vehicles in a geo-referenced map. Includes tracks, waypoints, trace, text, sensor coverage etc.



### Instrument Panel

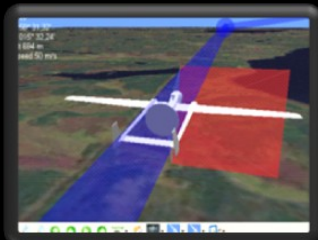
Displays heading, altitude, Outside Air Temperature (OAT), Engine RPM, airspeed and remaining fuel.



### Video Sensor Control

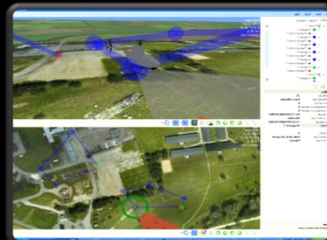
Displays live video from a vehicle sensor. Also allows you to steer the sensor, zoom in/out, take image snapshots etc.

## Optional Components



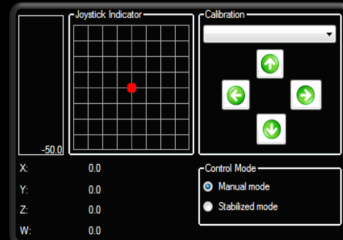
### 3D Terrain Display

Displays all connected vehicles in a 3D Terrain. Around the world coverage. Includes tracks, waypoints, trace, text, sensor coverage etc.



### Mission Planner

Separate application used for pre-flight mission planning including waypoint editing, sensor positioning etc.



### PRST Display SDK

This Software Development Kit is provided to facilitate the creation of user specific PRST- and vehicle specific steering mode

## NATO STANAG 4586 Toolkits

### NATO STANAG 4586 VSM C++ Toolkit

By using the Application Programming Interface (API) included with the SDK, software developers can write custom code to send and receive DLI (Data Link Interface) messages to and from one or multiple connected ground control stations. It is written in C++ to be platform independent and the entire public interface of the API is contained in a single static library. This SDK will dramatically speed up your NATO STANAG 4586 integration process and also make it easier to keep up to date with the latest edition of the STANAG 4586 standard.

### NATO STANAG 4586 CUCS C++ / .NET Toolkit

For certain vehicle applications it is sometimes not enough to develop custom displays for the PRST Base System, it might be necessary to develop custom software. To fulfill this demand we have developed a CUCS SDK which can be used to develop applications that connect to NATO STANAG 4586 compatible VSMs.



sales@instrumentcontrol.se - www.instrumentcontrol.se

Instrument Control Sweden AB - Kungsgatan 29 - SE582 18 Linköping - Sweden - Phone +46 (0)13 31 20 70