

Release Notes

Cockpit Software Suite

V 01.04.00

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ACES





Table of Contents

Overview	1
Compatibility	1
Installation Instructions	1
Cockpit Suite Versions	2
Version Change Information	2
Cockpit Builder Versions	3
v01.04.00	3
v01.03.00	3
v01.02.00	3
v01.01.00	3
v01.00.02	3
v01.00.01	4
v01.00.00	4
v00.03.08	4
v00.03.07	4
v00.03.06	5
v00.03.05	5
v00.03.04	5
v00.03.03	5
v00.03.02	6
v00.03.01	6
v00.03.00	6
v00.02.14	6
v00.02.13	6
v00.02.12	7
v00.02.11	7
v00.02.10	7
v00.02.09	7
v00.02.08	7
v00.02.07	7
v00.02.06	8
Cockpit Interface Versions	8
v01.03.00	8
v01.02.00	8
v01.01.00	8
v01.00.02	8
v01.00.01	8
v01.00.00	8
v00.02.06	9
v00.02.05	9
v00.02.04	9
v00.02.03	9
v00.02.02	9



v00.02.01	9
v00.02.00	9
v00.01.04	9
v00.01.03	10
v00.01.02	10
v00.01.01	10
Tested Configurations	10



Overview

The ACES Cockpit Software Suite (CSS) connects with various flight simulator programs, extracts the data and uses it to drive simulated gauges designed with servos or stepper motors. The Cockpit Builder application (CB) maintains the configuration of your cockpit and the mapping between your physical gauges and the data from the flight simulator program. The Cockpit Interface application (CI) extracts the data in real time from your flight simulator program and uses it to drive your gauges. It loads the configuration and map files that were generated by CB. CI uses those files to get the appropriate data for each gauge in your cockpit.

Compatibility

CSS makes use of plug-ins to connect to different flight simulators. A different plug-in is required for each flight simulator program you want to use. The ACES CSS has plug-ins for the following flight simulator programs. Refer to the Release Notes for each plug-in to determine any additional compatibility details, such as flight simulator versions and which aircraft are supported in that flight simulator.

CSS has plug-ins available for the following flight simulator programs:

- IL-2 Sturmovik: Cliffs of Dover
- X-Plane
- DCS World

Installation Instructions

1. Run the setup application for ACES CSS. This will install the base ACES CSS applications (along with the default plug-in for IL2 Sturmovik: Cliffs of Dover).
2. Enter the product key
 - a) Run the Cockpit Builder application (CB).
 - b) From the tool bar in the main window, click the product keys button.
 - c) In the Product Keys window, click the Add Key button.
 - d) In the Enter Product Key window, enter the product key and click OK.
3. Configure your cockpit.
 - a) Run CB.
 - b) From the main window tool bar, click the button for the Help Center.
 - c) Read the section on Getting Started. This will guide you through the process of configuring your cockpit, making a data map, and get flying.



Cockpit Suite Versions

The ACES Cockpit Software Suite (CSS) has a version number associated with it. CSS is composed of individual applications that have their own version numbers associated with them. This section lists the versions of the components in each version of CSS.

CSS Version	Cockpit Builder	Cockpit Interface
V01.04.00	V01.04.00	V01.03.00
V01.03.00	V01.03.00	V01.02.00
V01.02.00	V01.02.00	V01.01.00
V01.01.00	V01.01.00	V01.00.02
V01.00.02	V01.00.02	V01.00.02
V01.00.01	V01.00.01	V01.00.01
V01.00.00	V01.00.00	V01.00.00
V00.02.06	V00.03.08	V00.02.06
V00.02.05	V00.03.07	V00.02.05
V00.02.04	V00.03.06	V00.02.04
V00.02.03	V00.03.05	V00.02.03
V00.02.02	V00.03.04	V00.02.03
V00.02.01	V00.03.02	V00.02.02
V00.02.00	V00.03.00	V00.02.00
V00.01.03	V00.02.14	V00.01.04
V00.01.02	V00.02.13	v00.01.04
V00.01.01	V00.02.12	V00.01.02
V00.01.00	V00.02.07	V00.01.01

Version Change Information

This section provides information about what changed in each version of the CSS applications.



Cockpit Builder Versions

v01.04.00

- Added support for altimeter pressure instrument input.
- Bug Fix (223, 224): Altimeter pointers for 1,000's and 10,000's would sometimes not move in test mode or in flight.

v01.03.00

- Added support for DCS World plug-in.
- Added support for gauges: clock, accelerometer min value pointer, accelerometer max value pointer, artificial horizon pitch shift, voltmeter and ammeter.
- Added units of atmospheres for pressure type gauges.
- Bug Fix (200): Canceling the map file open dialog was causing errors.

v01.02.00

- Added support for gauges: accelerometer, carb air temp and suction.
- Bug Fix (184): During calibration, if all scale points were used, when the user was forced to enter the 0/Neutral point, the Next button was disabled so the calibration couldn't be completed.
- Bug Fix (183, 192): During calibration of a symmetrical instrument connected to a mini-stepper module, the mirrored scale point values were incorrectly calculated.
- Bug Fix (181): Instruments with gear ratios might time out during home cycle.

v01.01.00

- Added support for steppers with stops using the stepper module. This feature requires the stepper module firmware to be v00.01.00 or higher.

v01.00.02

- Updates to the plug-in framework while integrating with X-Plane plug-in.
- Added support for units of kilogram (kg), pounds (lb) and percent deflection. KG and LB are used for fuel quantity. Percent deflection are used for some gauges like elevator trim that are not reported by the simulation in absolute units, but rather in a percent deflection of the gauge pointer.
- Bug Fix (161): Fuel pressure gauge wasn't available for selection.



v01.00.01

- Bug Fix (152): Fuel pressure not correctly read from Cliffs of Dover.
- Bug Fix (152): The timer item was not being correctly accessed in Cliffs of Dover shared memory area.
- Bug Fix (152): Several of the shared memory items were not correctly accessed in the Cliffs of Dover shared memory area. The correct values were being displayed, but with the wrong subtype. For these items, any sim data map that references them will continue to work as is. However, if you load it into Cockpit Builder, it will appear with the wrong shared memory item name. (For example, if you originally had mapped to I_VelocityIAS subtype 9 it will now show up as I_Altitude subtype 9.) For each of these items, you may leave it as is or change each one to have the correct shared memory item name and change the subtype to 0.

For example, if you previously had mapped to I_Variometer subtype 9, it will now show up as I_VelocityIAS subtype 9. To set the map correctly, change it to I_Variometer subtype 0.

As an alternative, if you let the sim data map wizard redo the map, it will set everything correctly. The effected shared memory items are: I_Altitude, I_VelocityIAS, I_Variometer, I_DirectionIndicator, I_MagneticCompass, I_RepeaterCompass, I_Suction, I_Turn, I_FuelReserve, I_Slip

- Bug Fix (156): Servos don't initialize correctly for test mode.

v01.00.00

- Mini Maestro connection uses native USB so is now plug and play like ACES modules.
- Mini Maestro can now have a friendly name.
- Set servo movement limits based on instrument calibration.
- Ensure Mini Maestro controller is in USB communication mode with no CRC.
- New user interface with separate windows for My Cockpit, Module Configuration and Sim Data Map.
- Implement plug-in framework.

v00.03.08

- Bug Fix: Simulated data was not correctly covered to/from British planes with boost gauges.

v00.03.07

- Added support for Mini Stepper Instrument Module.
- Bug Fix: The sim data map wizard for Cliffs of Dover tried to configure British planes with manifold pressure gauges. The British planes had boost gauges. This has been corrected.



v00.03.06

- Added support for dual pointer tachometers.
- Added bombers to the Cliffs of Dover sim data map wizard.

v00.03.05

- Bug Fix: On startup, Cockpit builder would ask for confirmation about using servos for instruments that can be continuous rotation. Now it only asks when you make that configuration and not every time the application starts.
- The Help About window now opens where the mouse click occurs.
- The option to download firmware to ACES modules is only available if the boot loader is found to be installed.
- The installer no longer offers the option to automatically install the USB boot loader. It must be manually installed if needed.

v00.03.04

- Added support for new gauges:
 - Altimeter with three separate pointers: 100's, 1,000's and 10,000's
 - Elevator trim
 - Pneumo container pressure
 - Port and starboard brake pressure
- Changed ACES module configuration window to be non modal so it can be left open for reference while configuring instruments on the My Cockpit tab.
- Help file updates to make the instructions for setting up a system (Getting Started) more clear.
- Added logging of My Cockpit instrument information at startup when detailed logging is enabled.
- Prevent calibration window from opening until a controller is configured for the instrument.
- Bug Fix: Stepper motors would initialize to slow regardless of the pointer speed setting on My Cockpit tab.
- Added the software suite number to the "About" window.
- Added firmware download utility for ACES modules.

v00.03.03

- Internal test version. No changes.



v00.03.02

- Add support for stepper driven heading card (continuous rotation pointer)

v00.03.01

- Bug Fix: Saving instrument configuration with an empty instrument row would save an empty entry in the file which caused error messages on start up.
- Added application version entry in the log file.
- Added units of Knots (used by some British air speed instruments)

v00.03.00

- Added support for ACES Instrument Module Stepper.

v00.02.14

- Added a calibration wizard to make it easier to calibrate instruments. (See the Help Center.)
- Bug Fix: Pressing the escape key while calibrating an instrument would cause an error the next time you attempted to calibrate an instrument.
- Bug Fix: If an error occurs moving the servo and the application times out, the log file was showing the wrong target position.

v00.02.13

- Added more common names for instruments in the instrument drop down list.
- Spelled out abbreviations for units of measure.
- Filtered the units drop down list to only show the entries that are valid for the selected instrument.
- Moved Sim Data Map functions for New, Open, Save and Save As out of the main file menu and put them as tool bar buttons on the Sim Data Map tab.
- Save buttons on both tabs will be enabled only when the corresponding file needs to be saved.
- Improved calibration process to accomodate three types of instruments (Min/Max, Up/Down, and Left/Right).
- Removed the need to select the input separately from the instrument name.
- Updated Help Center with some additional trouble shooting information.
- Bug Fix: In some cases the calibration would not wait for the servo to reach the target position before taking a snapshot of the reference pulse width.



- Bug Fix: Sometimes when running the Maestro configuration test, the Check Mark or X icon would not update appropriately.
- Change mouse cursor to busy when waiting for servo movements to complete.
- Move instrument pointer to min position when exiting calibration or test mode.
- Bug Fix: Maestro configuration test passed even if the TTL COM port was specified instead of the Command COM port.
- Bug Fix: Masetro configuration test passed even when a device number was entered that isn't connected to the system.
- Bug Fix: Log file names were generated with the month - 1.

v00.02.12

- Implemented additional messaging when Detailed Logging is enabled.

v00.02.11

- Implemented additional messaging when Detailed Logging is enabled.

v00.02.10

- Fixed issue where app hangs waiting for servo to home.
- Added limit checks to the servo position returned from the Maestro.
- Implemented additional messaging when Detailed Logging is enabled.

v00.02.09

- Changed location of log files to "Users\username\AppData\Local\ACES Cockpit Suite" (The same location as the configuration files.)
- Implemented additional messaging when Detailed Logging is enabled.

v00.02.08

- Implemented additional messaging when Detailed Logging is enabled.

v00.02.07

- Changed color scheme to match Cockpit Interface.
- Changed calibration window to check validity when OK is clicked instead of Set Min or Set Max.



- Updated calibration to allow servos that rotate in either direction.
- Updated installation package to install Cockpit Builder and Cockpit Interface.

v00.02.06

- Added support for Pololu Mini Maestro servo controller.
- Added installation package.

Cockpit Interface Versions

v01.03.00

- Added support for altimeter pressure instrument input.

v01.02.00

- Added support for DCS World plug-in.
- Added support for gauges: clock, accelerometer min value pointer, accelerometer max value pointer, artificial horizon pitch shift, voltmeter and ammeter.
- Added units of atmospheres for pressure type gauges.
- Bug Fix (201): Missing newline on 'No file loaded' message.

v01.01.00

- Added support for gauges: accelerometer, carb air temp and suction.

v01.00.02

- Updates to the plug-in framework while integrating with X-Plane plug-in.
- Bug Fix (166): Gauge doesn't initialize if the initial simulated value is too large.

v01.00.01

- On startup, CI will now open the last map file that was loaded. (If a map file is specified on the command line with -FILE, it will override this feature and load the file from the command line.)
- Bug Fix (152): Fuel pressure not correctly read from Cliffs of Dover.

v01.00.00

- Implement plug-in framework.



v00.02.06

- Bug Fix: Simulated data was not correctly covered to/from British planes with boost gauges.

v00.02.05

- Added support Mini Stepper Instrument Module.

v00.02.04

- Added support for dual pointer tachometers.

v00.02.03

- Added support for Altimeter with three separate pointers: 100's, 1,000's and 10,000's.
- Added the software suite number to the "About" window.

v00.02.02

- Bug Fix: Servo instruments wouldn't go to zero/min position when CI initialized.

v00.02.01

- Added application version entry in the log file.
- Bug Fix: I/O wouldn't cycle if a Maestro controller wasn't connected.

v00.02.00

- Added support for Instrument Module Stepper.
- Initialize instruments to zero/min position on startup.

v00.01.04

- Removed the display of instrument input. (The input no longer needs to be separately selected in Cockpit Builder as of 00.02.13).
- Bug Fix: When switching between simulation units and cockpit units in the Instrument Display window, the units labels on the display would not fully clear out, leaving some extraneous characters on the display.
- Bug Fix: Log file names were generated with the month - 1.



v00.01.03

- Bug Fix: Temperature conversion was being handled incorrectly, especially if no conversion was needed.
- Bug Fix: Certain types of open errors were not being logged.
- Bug Fix: Errors reading Maestro preference settings were only logged if Detailed Logging was enabled.
- Bug Fix: The name of the COM port attempted to open wasn't logged.

v00.01.02

- Changed location of log files to "Users\username\AppData\Local\ACES Cockpit Suite" (The same location as the configuration files.)

v00.01.01

- Updated color scheme.
- Added support for Pololu Mini Maestro servo controller.
- Included Cockpit Interface in the installation package.
- Added caution icons for instrument not calibrated.
- Accommodated servos that rotate in either direction.

Tested Configurations

Cockpit Builder and Cockpit Interface have been tested with the following configurations:

- Windows 7, Windows 10
- Mini Maestro 12, Mini Maestro 18 (individual and multiple)
- Instrument Module Stepper alone and in combination with Maestro controllers

Instrument Module Stepper has been tested with the following stepper motors:

- Pololu #1204 (www.pololu.com)
- Pololu #1206 (www.pololu.com)
- OMC #11HS12-0674S (www.omc-stepperonline.com, www.amazon.com)
- OMC #14HS13-0804S (www.omc-stepperonline.com, www.amazon.com)

Instrument Module Mini Stepper has been tested with the following motors:



- Switec X25, X27