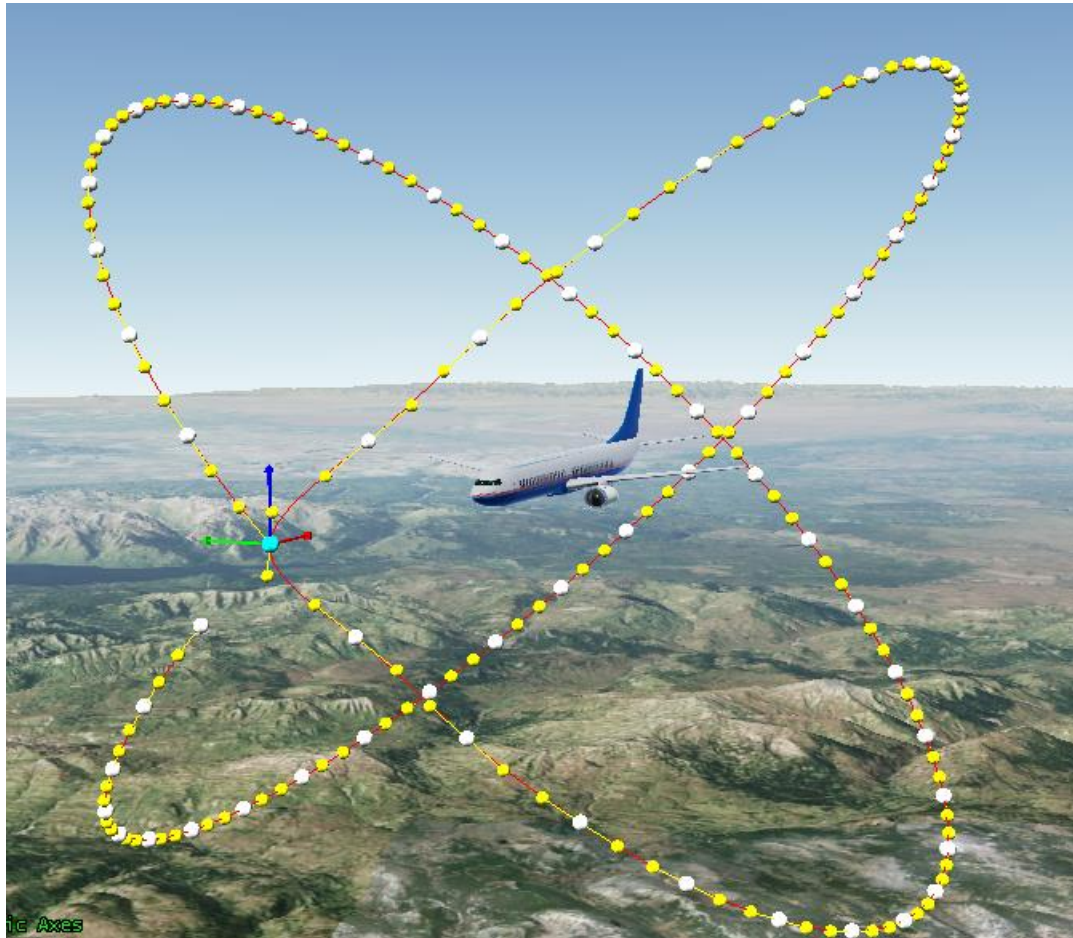


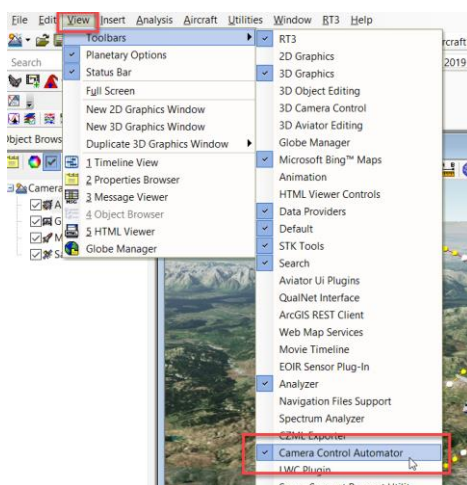
# Camera Control Automator

## Documentation

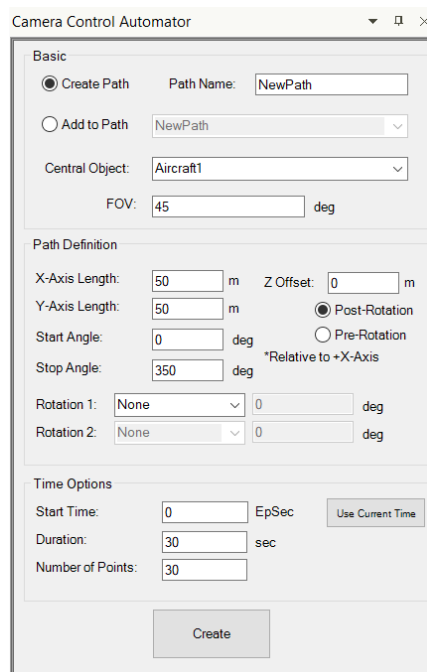


## INSTALLATION AND GETTING STARTED

The Camera Control Automator is a powerful tool that allows you to easily generate custom camera paths without the pain of having to click through every frame. Before getting started you will need to install the program in the proper location so STK can find the files. Move the “CameraControlAutomator” folder and the “CameraControlAutomator.xml” into the following directory: C:\ProgramData\AGI\STK 12\Plugins. It is important that the xml is separate from the folder. Additionally, you may have to unblock the xml and the dll (C:\ProgramData\AGI\STK 12\Plugins\CameraControlAutomator\CameraControlAutomator\bin\Release). You can do this by right-clicking the file, selecting “Properties”, then checking “Unblock”. When the files are in the correct location all open instances of STK need to be shut down so the plugin directory will be refreshed. When you now reopen STK, this plugin will be an option for you. The plugin can be opened from scenario menu at the top, but the recommended method is to add a toolbar option by going to View->Toolbars->Camera Control Automator. This is demonstrated in the image below.



When the plugin is opened you will see a GUI window appear on the right-hand side of your screen that will look similar to the image below.



There are three major sections on this panel that will be discussed in detail: Basic Options, Path Definition, and Time Options. All of the options will be pre-populated on load with default values. The values will be the same every time the plugin is ran. Once you have completed a path definition you simply need to click the “Create” button at the bottom. This plugin does not currently offer a full delete functionality, only overwrite capability. As a result, if you would like to delete a full path you will need to access the full camera control panel. You will also need to access the full camera control panel if you would like to edit individual frames, as this plugin is meant to create entire paths.

## BASIC OPTIONS

The basic options define what path to create along with the parent object and field of view of the camera. You can either create a new path or add to an existing path. If you create a new path with the same name as an existing path it will overwrite that existing path. Adding to an existing path will concatenate the new shape at the specified start time. This option does not assume that it is being added to the end of a path, instead it will add the new points at whatever start time is specified. If you are trying to add to the end of a path make sure the start time of the new segment is past the end time of your last segment.

The central object can be any object that has a model associated with it (i.e. aircraft, satellite, missile, facility, etc.). It cannot be attached to an analysis object such as a coverage definition, sensor, antenna, etc. The generated camera path will always point at the center of this object for the entirety of the camera path.

The Field of View (FOV) setting specifies the FOV of the camera for the entirety of the path. Valid values for FOV range from 0 to 100 deg. You will receive a warning if your entered value does not meet this criteria.

## PATH DEFINITION

The shape and location of the camera path is completely defined in the “Path Definition” section of the page. This section is designed to base the camera path as a projection onto the body X-Y plane that can then be rotated and

manipulated afterwards. This is why the lengths are relative to the X and Y axis and the angles are relative to the +X axis. The default is to create an ellipse with the given dimensions and then rotate it accordingly

The X-Axis Length and Y-axis Length should be defined first. Any range of values is acceptable as long as it is a number. 0 m is also a valid entry for one axis, which will create a straight line. An example of this will be given later in this document. The start and stop angles give where you want your arc to begin and end relative to the +X axis. Keep in mind that they angles are for before any rotations take place.

The Z-Offset adds additional height to the camera points and by default this offset is applied after any rotations have taken place. Select “Pre-Rotation” to have the Z-Offset applied before the rotations.

The plugin allows for two separate rotations of the camera path, which allows for every possible rotation. To apply a rotation simply specify an axis and the degree to which you would like to rotate. The second rotation will only become available if you have a first rotation active. Keep in mind that the second rotation will be relative to the end of the first rotation, not the original configuration.

## TIME OPTIONS

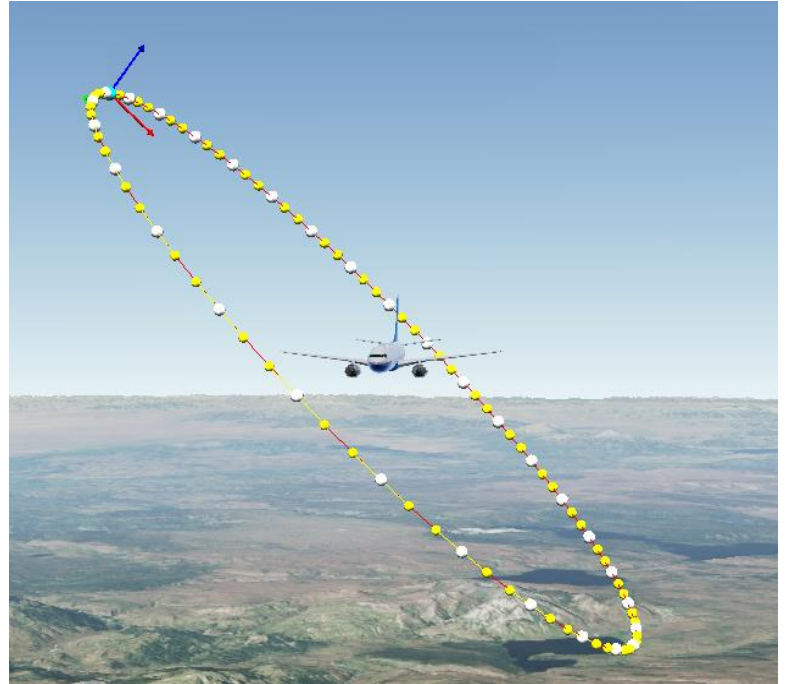
The time options specify when the path begins, how long it will take to reach the end of the path and the number of points in between. Keep in mind that the start time is in EpSec. Additionally you can use the current animation time by clicking the “Use Current Time” button. By default the number of points will be set to 30. If you are looking to hand edit the points after they are created it is recommended to lower the number of points for easier editing. The recommended minimum number of points for a full circle is 8.

## EXAMPLES

The following sections give some basic examples on how this plugin can be used to create commonly used paths.

### ROTATED ELLIPSE

The following set of settings will give an elongated ellipse along the x-axis that has been rotated 45 deg about the x-axis.



## AIRCRAFT PASSBY

A commonly desired path is a simple straight line. This is surprisingly difficult with the built in STK camera but it is very simplistic when using the plugin. The settings below will create a straight line long the side of the wing. Note the differences in 0 m axis length, end angle and Z-Offset pre-Rotation.

Camera Control Automator

Basic

☒ Create Path
 Path Name:

☐ Add to Path

Central Object:

FOV:  deg

Path Definition

X-Axis Length:  m
 Z Offset:  m

Y-Axis Length:  m
☐ Post-Rotation

Start Angle:  deg
☒ Pre-Rotation

Stop Angle:  deg

\*Relative to +X-Axis

Rotation 1:   deg

Rotation 2:   deg

Time Options

Start Time:  EpSec

Use Current Time

Duration:  sec

Number of Points:

Create

