Using the UAV Simulator with Unreal Engine

Installs and plugins

* UAV toolbox
* UAV blockset
* Aerospace blockset
* UAV toolbox interface for Unreal Engine Projects
* AutoVrtlEnv.uproject is located in C:\ProgramData\MATLAB\SupportPackages\R2021b\_1\toolbox\shared\sim3dprojects\spkg\project\AutoVrtlEnv C:\ProgramData\MATLAB\SupportPackages\R2021b\_1\toolbox\shared\sim3dprojects\spkg\project\AutoVrtlEnv
* Copy target Unreal project to local folder and plugin to Unreal Editor: sample code is in copyplugins.m

Install Unreal Engine v4.26

Unreal Project version migration steps

* from <https://www.mathworks.com/help/uav/ug/migrate-projects-developed-using-prior-support-packages.html>
* Open Unreal Engine 4.25. For example, navigate to C:\Program Files\Epic Games\UE\_4.25\Engine\Binaries\Win64 and open UE4Editor.exe.
* Use the Unreal Project Browser to open the project that you want to migrate.
* Follow the prompts to open a copy of the project. The editor creates a new project folder in the same location as the original, appended with 4.25. Close the editor.
* In a file explorer, remove the space in the migrated project folder name. For example, rename MyProject 4.25 to MyProject4.25.
* Use MATLAB® to open the migrated project in Unreal Editor 4.25. For example, if you have a migrated project saved to the C:/Local folder, use this MATLAB code:

1. Create Unreal C++ Project

2. Enable Matlab plugins in Unreal Editor

3.

Coordinate systems

1. Local tangent plane coordinates (LTP), Local Ellipsoidal System, local geodetic coordinate system, local vertical, local horizontal coordinates (LVLH) – east, north, up (ENU) and north, east, down (NED): Frames are location dependent
2. Geographic coordinate system (GCS): measurements are angles
3. Earth-centered, earth-fixed coordinate system (ECEF) – geocentric coordinate system used mainly for tracking orbits of satellites

C++ Project Hack

1. Create a new C++ class

2. Get reference to the required object through the Blueprint class

Text

Description automatically generated