**SPACE Z PROJECT**

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The Solution has a total of 5 projects

* Communication - ClassLibrary
* CommunicationServer - ConsoleApplication
* DSNCommandCenter - WPF Application
* LaunchedVehicle - WPF Application
* Payload - WPF Application

The WPF process communicate with each other using the TCP-IP based Windows Communication Foundation (WCF) Asynchronous Message Transfers.

**INSTRUCTIONS TO RUN THE PROJECT**

Libraries/Dependencies that needs to be installed

- FontAwesome5 (https://github.com/MartinTopfstedt/FontAwesome5)

- Newtonsoft.Json - (https://www.newtonsoft.com/json)

All these are available on the Nuget store.

* FRONT END : DSNCommandCenter, LaunchedVehicle, Payload - WPF
* BACK END : Communication, CommunicationServer - WCF
* Please choose ‘DSNCommandCenter’ and ‘CommunicationServer’ as startup projects.
* Please update the below mentioned paths

1. MissionControlSystem.xaml.cs - Line - 49. Please choose your respective path to the LaunchedVehicle Executable.

p.StartInfo = new ProcessStartInfo("C:\\Users\\nalla\\source\\repos\\SpaceZProject\\LaunchedVehicle\\bin\\Debug\\LaunchedVehicle.exe");

2. MissionControlSystem.xaml.cs - Line - 96. Please choose your respective path to the DSNCommandCenter project so that launch vehicle config files can be created and stored.

var dir = @"C:\Users\nalla\source\repos\SpaceZProject\DSNCommandCenter\ConfigFiles\**LaunchVehicleConfigs**"; // folder location

3. MissionControlSystem.xaml.cs - Line - 169. Please choose your respective path to the DSNCommandCenter project so that payload config files can be created and stored.

var dir = @"C:\Users\nalla\source\repos\SpaceZProject\DSNCommandCenter\ConfigFiles\**PayloadConfigs**"; // folder location

4. CommmunicationSystem.xaml.cs - Line 115. Please choose your respective path to the Payload Executable.

p.StartInfo = new ProcessStartInfo("C:\\Users\\nalla\\source\\repos\\SpaceZProject\\Payload\\bin\\Debug\\Payload.exe");

* After the solution is run up, we’ll see two main options

Text

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1. Kindly go to the Mission Control System and configure the Payloads by choosing Configure Paylods Tab.
2. After Payloads are configured, choose “Configure Vehicle” tab and do the required configuration. The newly configured vehicle can be seen on the unlaunched vehicles text box in the “SpaceCrafts” tab.
3. LaunchVehicle or Rocket can be launched from “Launch Vehicle” Tab. Once the vehicle is launched, it is then shown on the launched Space Crafts text box in the “SpaceCrafts” tab and it can be chosen to see the information about it.
4. Once the Launch vehicle is launched, we can go to “Communication System” main menu tab and send/receive commands to and from the Launched Vehicle.
5. We can request telemetry, deploy payloads, request payload telemetry, request data etc from the respective communication systems tabs. i.e Launch Vehicle or Payload Vehicle Communication Systems.