

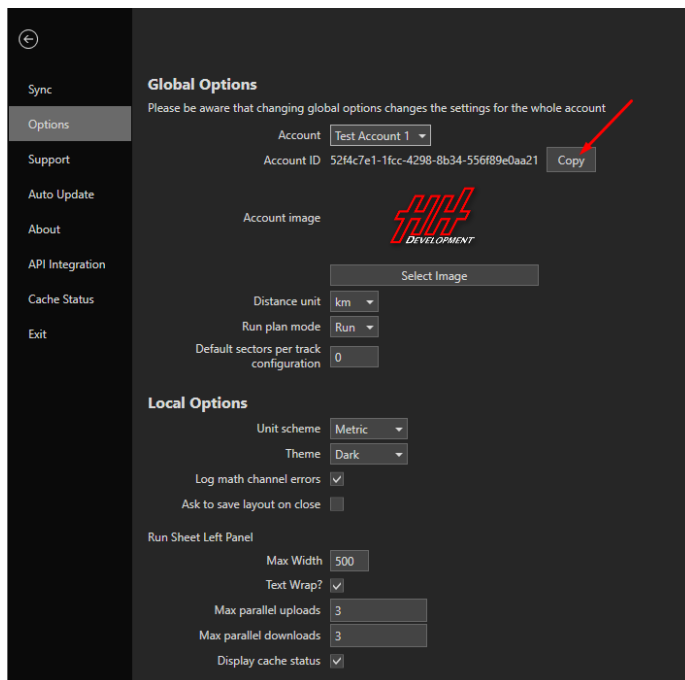
# HH Data Management Plugin

## 1. IHhDataManagementPlugin

```
#region IHhDataManagementPlugin
0 references
public string Name => "HHDev Plugin";//plugin Name
0 references
public string AutoUpdateKey => "HHDM-HHDev";// key used to get auto update in HH DM
0 references
public Guid PluginId => Guid.Parse("{06B9280A-2343-4A7A-9F2E-DB3C82467DC1}");// Needs to be a unique Guid
0 references
public Guid[] AccountIds => new Guid[] { Guid.Parse("52f4c7e1-1fcc-4298-8b34-556f89e0aa21") }; // Account Id accessible in HH DM from File => Option
#endregion
```

Need to change :

- Name
- AutoUpdateKey
- Plugin ID (unique Guid)
- AccountIds
- 

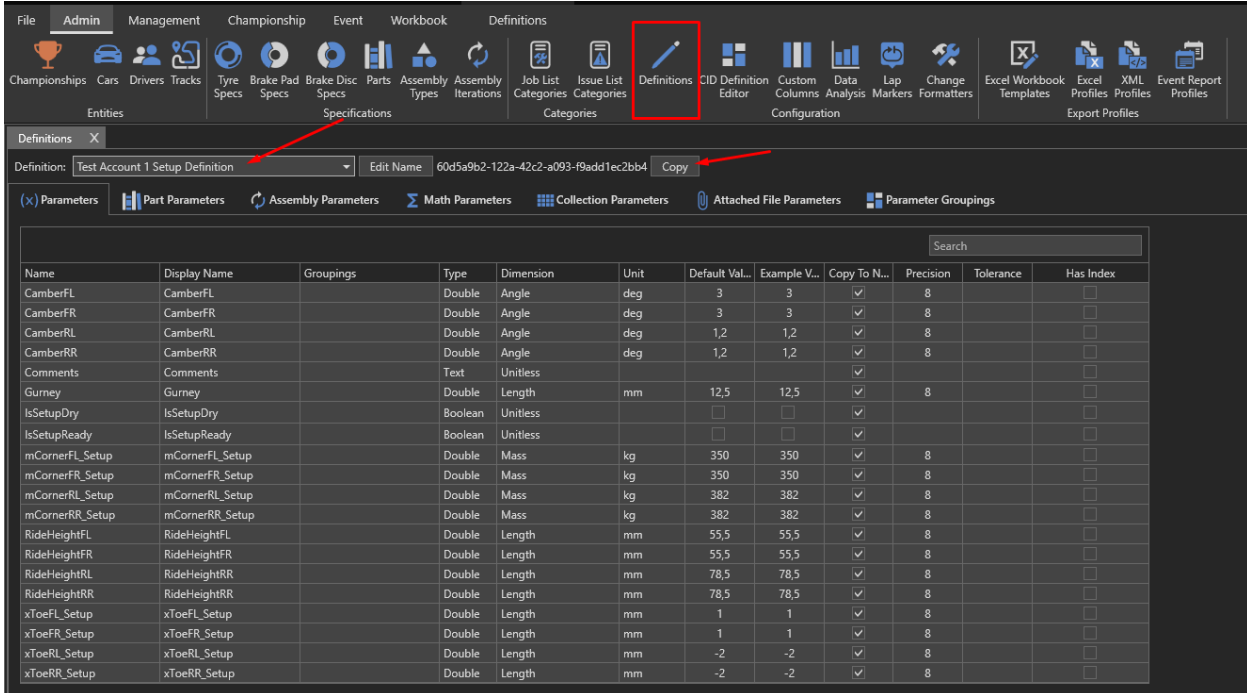


## 2. ICustomFlatModelProviderPlugin

Needs to change FlatModel Name and Definition Id.

```
#region ICustomFlatModelProviderPlugin
0 references
public List<FlatModelInitializationDefinition> FlatModelDefinitions => new List<FlatModelInitializationDefinition>()
{
    new FlatModelInitializationDefinition(FlatModelTypes.Setup, "60d5a9b2-122a-42c2-a093-f9add1ec2bb4", typeof(HHDevRunSheetFlatModel)) // Guid of the setup definition(can be found in Admin => Definition)
};

#endregion
```



| Name            | Display Name    | Groupings | Type    | Dimension | Unit | Default Val.             | Example V...             | Copy To N... | Precision | Tolerance | Has Index                |
|-----------------|-----------------|-----------|---------|-----------|------|--------------------------|--------------------------|--------------|-----------|-----------|--------------------------|
| CamberFL        | CamberFL        |           | Double  | Angle     | deg  | 3                        | 3                        | ✓            | 8         |           | <input type="checkbox"/> |
| CamberFR        | CamberFR        |           | Double  | Angle     | deg  | 3                        | 3                        | ✓            | 8         |           | <input type="checkbox"/> |
| CamberRL        | CamberRL        |           | Double  | Angle     | deg  | 1,2                      | 1,2                      | ✓            | 8         |           | <input type="checkbox"/> |
| CamberRR        | CamberRR        |           | Double  | Angle     | deg  | 1,2                      | 1,2                      | ✓            | 8         |           | <input type="checkbox"/> |
| Comments        | Comments        |           | Text    | Unitless  |      |                          |                          | ✓            |           |           | <input type="checkbox"/> |
| Gurney          | Gurney          |           | Double  | Length    | mm   | 12,5                     | 12,5                     | ✓            | 8         |           | <input type="checkbox"/> |
| IsSetupDry      | IsSetupDry      |           | Boolean | Unitless  |      | <input type="checkbox"/> | <input type="checkbox"/> | ✓            |           |           | <input type="checkbox"/> |
| IsSetupReady    | IsSetupReady    |           | Boolean | Unitless  |      | <input type="checkbox"/> | <input type="checkbox"/> | ✓            |           |           | <input type="checkbox"/> |
| mCornerFL_Setup | mCornerFL_Setup |           | Double  | Mass      | kg   | 350                      | 350                      | ✓            | 8         |           | <input type="checkbox"/> |
| mCornerFR_Setup | mCornerFR_Setup |           | Double  | Mass      | kg   | 350                      | 350                      | ✓            | 8         |           | <input type="checkbox"/> |
| mCornerRL_Setup | mCornerRL_Setup |           | Double  | Mass      | kg   | 382                      | 382                      | ✓            | 8         |           | <input type="checkbox"/> |
| mCornerRR_Setup | mCornerRR_Setup |           | Double  | Mass      | kg   | 382                      | 382                      | ✓            | 8         |           | <input type="checkbox"/> |
| RideHeightFL    | RideHeightFL    |           | Double  | Length    | mm   | 55,5                     | 55,5                     | ✓            | 8         |           | <input type="checkbox"/> |
| RideHeightFR    | RideHeightFR    |           | Double  | Length    | mm   | 55,5                     | 55,5                     | ✓            | 8         |           | <input type="checkbox"/> |
| RideHeightRL    | RideHeightRL    |           | Double  | Length    | mm   | 78,5                     | 78,5                     | ✓            | 8         |           | <input type="checkbox"/> |
| RideHeightRR    | RideHeightRR    |           | Double  | Length    | mm   | 78,5                     | 78,5                     | ✓            | 8         |           | <input type="checkbox"/> |
| xToeFL_Setup    | xToeFL_Setup    |           | Double  | Length    | mm   | 1                        | 1                        | ✓            | 8         |           | <input type="checkbox"/> |
| xToeFR_Setup    | xToeFR_Setup    |           | Double  | Length    | mm   | 1                        | 1                        | ✓            | 8         |           | <input type="checkbox"/> |
| xToeRL_Setup    | xToeRL_Setup    |           | Double  | Length    | mm   | -2                       | -2                       | ✓            | 8         |           | <input type="checkbox"/> |
| xToeRR_Setup    | xToeRR_Setup    |           | Double  | Length    | mm   | -2                       | -2                       | ✓            | 8         |           | <input type="checkbox"/> |

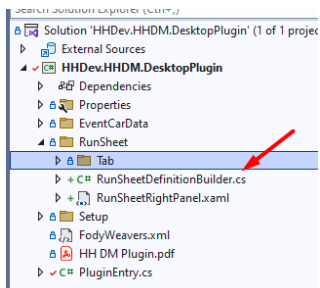
### 3. IRunSheetCustomizationPlugin

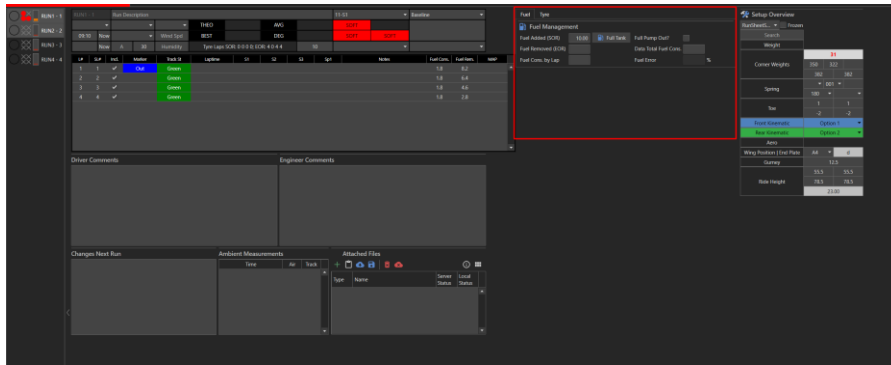
Need to change runsheet ID (can be found in HH DM in the runsheet definition)

```
#region IRunSheetCustomizationPlugin
0 references
public List<KeyValuePair<Guid, RunSheetCustomizationConfig>> RunSheetCustomizationConfigs { get; } = new List<KeyValuePair<Guid, RunSheetCustomizationConfig>>()
{
    new KeyValuePair<Guid, RunSheetCustomizationConfig>(Guid.Parse("07111622-0281-4085-8118-d82082f84007"),
        new RunSheetCustomizationConfig(new List<CompositeControlDefinition>(),
            RunSheetDefinitionBuilder.GetLayoutDefinition(),
            RunSheetDefinitionBuilder.GetPrimitiveDefinitions(),
            new List<StyleDefinition>(),
            null,null,null,null)),
};

#endregion
```

Can manage the Runsheet design here.



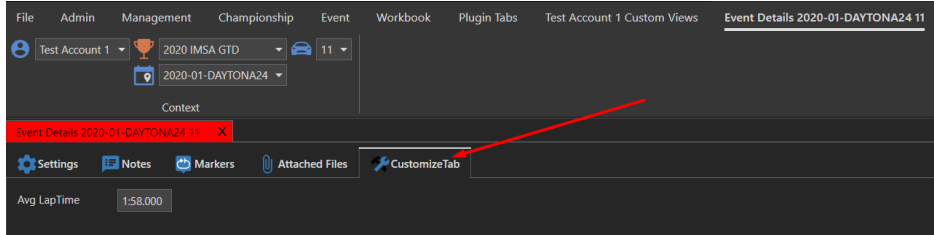


#### 4. IEventCarDataCustomizationPlugin

Need to change EventCarData definition Id. Can add new tabs following the example of CustomizeTab.

```
0 references
public List<KeyValuePair<Guid, EventCarDataCustomizationConfig>> EventCarDataCustomizationConfigs { get; } = new List<KeyValuePair<Guid, EventCarDataCustomizationConfig>>()
{
    new KeyValuePair<Guid, EventCarDataCustomizationConfig>(
        Guid.Parse("4a1632e6-c322-445b-bc08-7c6512403345"),
        new EventCarDataCustomizationConfig(GetEventTabsWithDefault(new List<HHCustomizableTab>()
        {
            new HHCustomizableTab("CustomizeTab", typeof(CustomizeTabView), "setup")
        })),
    );
};

1 reference
private static IEnumerable<HHCustomizableTab> GetEventTabsWithDefault(IEnumerable<HHCustomizableTab> customTabs)
{
    var retList = new List<HHCustomizableTab>();
    retList.AddRange(CustomTabsHelpers.GetEventDefaultTabs());
    retList.AddRange(customTabs);
    return retList;
}
```



#### 5. Simulation Graphs

This is a simple example to display setup array value on graphs and be able to compare setups. This can be used for simulation result or any setup calculation.

The graphs can be managed in [SimulationResultsViewModel](#)

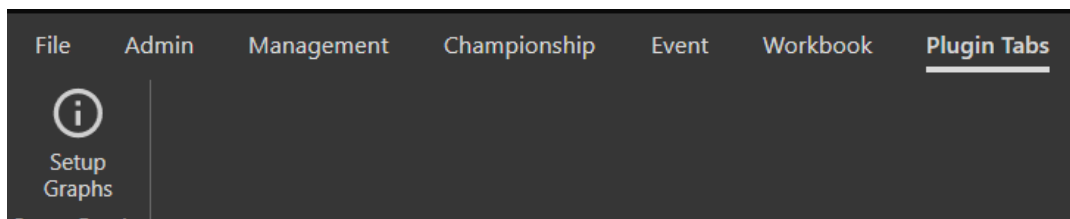
The array are created in the [HHDevSetupFlatModel](#)

```

11 namespace HHDev.HHDM.DesktopPlugin.Setup
12 {
13     7 references
14     public class HHDevSetupFlatModel : SetupFlatModel
15     {
16         0 references
17         public HHDevSetupFlatModel(SetupFlatModelInitializationObject initializationObject, TypeWrapperInitializationContain
18         {
19             base.RegisterParameterAndFunction( // HH DM function with null checks. UpdateRakeCalculation will be called when
20             new string[] { "RideHeightFL", "RideHeightFR", "RideHeightRL", "RideHeightRR", "Chassis" }, //input parameter:
21             UpdateRakeCalculation, //Function called
22             new string[] { nameof(RakeAngle) }); // parameter updated
23             this.PropertyChanged += HHDevRunSheetFlatModel_PropertyChanged;
24             this.Maths.PropertyChanged += Maths_PropertyChanged;
25             InitializeSimulationValues();
26         }
27     }
28     1 reference
29     private void InitializeSimulationValues()
30     {
31         var array1 = new double[] { 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };
32         var array2 = new List<double>();
33         for (int i = 0; i < array1.Length; i++)
34         {
35             array2.Add(Math.Pow(array1[i], 2));
36         }
37         _simulationResults = new SimulationArraysContainer(array1, array2.ToArray());
38     }
39     1 reference
40     private void Maths_PropertyChanged(object sender, System.ComponentModel.PropertyChangedEventArgs e) //called when a l
41     {
42         if (e.PropertyName == "NameOfSetupMathsParameter")
43         {
44             //call function : Important to add null checks
45         }
46     }
47 }

```

A new tab is created in HH DM with a control named Setup Graphs



There is a button to add setup to compare results

