VSP Workshop 2016

OpenVSP – Variable Presets

Presented by:
Bryan Schmidt
Empirical Systems Aerospace, Inc.
Overview

• To be used to quickly switch between different user made presets
  – Can be any variable including, Translation, Rotation and Tessellation

Use Cases:
• Tessellation to fine tune Export files
• Different Configurations for comprehensive Aero analysis
• Varying specific design drivers

Different Model Conditions Made Available by a Saved Parameters Option
Use Case: Tessellation

- Varying Tessellation can be useful for several purposes
  - Appropriate grid spacing for panel method analysis
  - Finer grids for exporting the files to be modeled in other programs
  - In tandem, with improvements to mass properties
Use Case: Configurations

- Varying Configurations can be useful for several purposes
  - Completing Aero analysis between configurations
  - In tandem, with improvements to mass properties
Use Case: Design Differences

• Using Variable Presets, one VSP model can contain several different variations on the same model
  – Can contain the entire 737 family of aircraft in one vsp file
  – Able to quickly switch between the different models to perform quick and easy comparisons
GUI Overview

- Groups are a collection of Parameters
  - Defining which parameters will be changing between the different settings
- Settings are different values for the Parameters within groups
- Variable Presets GUI shown to the right
- Create Tab used for to create new groups and settings as well as add parameters to the groups
- Adjust Tab used to alter the values of parameters within the setting
Order of Operations

1. Create: TestGroup
   Adjust: Add

2. Create: TestGroup
   Adjust: Add

Variable List

1. COMP | GROUP | PARM
2. COMP | GROUP | PARM
3. COMP | GROUP | PARM
Order of Operations – Cont.

- Select Preset
- Group: TestGroup
- Setting: TestSetting
- Apply

Edit
- Save Changes
- Delete Current

Create
- Adjust

Create Preset
- Group: TestGroup
- Setting: TestSetting
- Add

Variable
- Container: 0.UserParms
- Group: User_Group
- Parm: User_0
- Add Variable
- Delete Variable

Variable List
- COMP
- GROUP
- PARM

OR

Create Preset
- Group: TestGroup
- Setting: TestSetting
- Add

Variable
- Container: 0.UserParms
- Group: User_Group
- Parm: User_0
- Add Variable
- Delete Variable

Variable List
- COMP
- GROUP
- PARM
- TestGeom : Design : Length
- TestGeom : Shape : Test_U
- TestGeom : XForm : X_Rel_Location
- TestGeom : XForm : X_Rel_Rotation
Editing Presets

- Once Group, Setting, and Parms have been added the adjust tab is available to edit values.

- Once changes have been made they can be saved to the setting.

- The user can then switch between groups and setting by choosing the desired and clicking the apply button.
DEMO
Questions?
Contact Information

Bryan Schmidt

Bryan.Schmidt@esaero.com