

Core Concepts & Terminology

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Description

This section covers the fundamental concepts that make up the DSix simulation environment and are necessary for the development and deployment of DSix simulation applications. The terminology that is unique to DSix will be presented.

What you will learn

Upon completion of this section, you will be able to:

- Describe what is meant by a DSix **project**
- Describe what is meant by a DSix **module**
- Know what the **BAR database** is and why it is important
- Describe what constitutes an **InfoFile**
- Describe the purpose of the **Aeroport** utility

Core Concepts & Terminology

- ✈ DSix Project
- ✈ DSix Module
- ✈ BARJet
- ✈ Safe Mode
- ✈ InfoFile
- ✈ Aeroport
- ✈ IOD
- ✈ Data Editor
- ✈ Thirdwire
- ✈ DSix Remote
- ✈ Dictionary files
- ✈ ModData
- ✈ BAR database
- ✈ Vis6DOF

DSix Project

Description

A DSix **project** is a collection of code, data, settings and libraries required to run a simulation.

Usage

- ✈ Method of organizing files related to a single “project”
- ✈ Assists with project portability
- ✈ Assists with collaboration

DSix Module

Description

A DSix **module** is a compiled code component that provides specific functionality to DSix or to an external program.

Usage

- ✈ The DSix environment is built upon “modules”
- ✈ Provide a way to “customize” DSix
- ✈ Provide a way to easily extend the capabilities of DSix

BARJet

Description

The generic jet sample flight model, developed by Bihrlle Applied Research Inc (BAR) that is included with DSix.

Usage

- ✈ Provides a working flight model for exploring the functionality of DSix
- ✈ Serves as a “template” for understanding the flight model structure

Safe Mode

Description

Safe mode is state in which the project .dll is released from use by the simulation environment.

Usage

- ✈ Allows the project to be recompiled without closing the project.

InfoFile

Description

An advanced set of data structures that supports aerodynamic data mechanization at runtime. It describes the functionality of the simulation by defining all of the variables and their corresponding data tables.

Usage

- ✈ Method of organizing aero data in a form used by DSix
- ✈ Can be thought of as “table look-up” data.

Aeroport

Description

An application designed to convert or “port” table-lookup data sets from one format to another.

Usage

- ✈ Assists in importing data from 3rd party formats into a DSix-compatible format
- ✈ Assists with data exchange between organizations

IOD

Description

A utility within DSix that provides a way to establish a **connection** with hardware or software devices and **map** to or from DSix variables, and **execute** custom IOD **functions** in response to simulation events. Also referred to as “I/O Devices”

Usage

- ✈ Connect to control sticks, keyboards, switches, etc..
- ✈ Provides a way to control & interact with the sim (e.g., triggers & events)

Data Editor

Description

A built-in DSix module that works with DSix Plots to provide users with several tools to create and manipulate their data.

Usage

- ✈ Provides ability to edit simulation data
- ✈ Provides a utility for creating “canned” inputs
- ✈ Provides a way to apply “functions” to data

Thirdwire

Description

A reference to the more advanced built-in image generation engine referred to as “Graphics II”. Third Wire Productions is the company that developed the graphics engine for Bihrlle.

Usage

- ✈ Same as “Graphics II”
- ✈ Provides the higher-end “out the window” visual scene for DSix

DSix Remote

Description

A DSix module that provides remote **synchronous simulation control** for supported DSix projects. It “**listens**” for commands and data from the “**controller**” and sends these commands and data to the DSix simulation **model**.

Usage

- ✈ Provides remote control of a simulation model
- ✈ Current module supports Ethernet

Dictionary File

Description

A text file used to define the data used by the flight model.

Usage

- ✈ Used by many DSix tools to interpret the data in the simulation
- ✈ Provides variable names, type, description, units, sign convention
- ✈ Recognized by the .dic extension.

ModData

Description

A code library embedded within DSix.

Usage

- ✈ Provides simulation resources to your flight model.

BAR Database

Description

The advanced, high-performance database in DSix where the simulation time history data is stored.

Usage

- ✈ Storage space for time history data
- ✈ Used by various functions within DSix (e.g., plots, data editor, etc.)

Vis6DOF

Description

A legacy term referring to the DSix application interface.

Usage

- ✈ Method of interfacing to DSix
- ✈ Vis6DOF.exe is the DSix application executable



Flight Simulation Environment