Release Notes for Aerospace Blockset™

How to Contact MathWorks

www.mathworks.com	Web
comp.soft-sys.matlab	Newsgroup
www.mathworks.com/contact_TS.html	Technical Support

suggest@mathworks.com	Product enhancement suggestions
bugs@mathworks.com	Bug reports
doc@mathworks.com	Documentation error reports
service@mathworks.com	Order status, license renewals, passcodes
info@mathworks.com	Sales, pricing, and general information

508-647-7000 (Phone)

508-647-7001 (Fax)

The MathWorks, Inc.
3 Apple Hill Drive
Natick, MA 01760-2098

For contact information about worldwide offices, see the MathWorks Web site.

Release Notes for Aerospace Blockset™

Trademarks

Patents

Contents

R2007a

R2006b

R2006a

R14SP3

No New Features or Changes

R14SP2+

R14SP2

No New Features or Changes

R2013a

Version: 3.11
New Features: Yes
Bug Fixes: Yes

Flight simulator interface block support for FlightGear Version 2.8

These blocks support FlightGear v2.8.0:

- FlightGear Preconfigured 6DoF Animation

- Generate Run Script

- Pack net_fdm Packet for FlightGear

- Receive net_ctrl Packet from FlightGear

- Unpack net_ctrl Packet from FlightGear

For more information on working with FlightGear, see "Flight Simulator Interface".

Planetary Ephemeris block to implement position and velocity of Solar System planets

The Planetary Ephemeris block in the Environment/Celestial Phenomena sublibrary implements the position and velocity of an astronomical object.

Earth Nutation block to implement nutation in longitude and obliquity of Earth

The Earth Nutation block in the Environment/Celestial Phenomena sublibrary implements the nutation in longitude and obliquity of Earth according to the International Astronomical Union (IAU) 1980 nutation series.

Moon Libration block to implement relative motion attitude of Moon

The Moon Libration block in the Environment/Celestial Phenomena sublibrary implements the relative motion attitude of Earth's Moon.

Lowest altitude parameter for specifying altitudes below sea level using Lapse Rate Model block

The **Lowest altitude (m)** parameter of the Lapse Rate Model block enables to specify an altitude below sea level to calculate varying values of temperature and pressure below mean sea level. For more information, see Lapse Rate Model.

Updated Demo

The NASA HL-20 with FlightGear Interface example has been updated.
You no longer need FlightGear software installed to simulate the example.
Instead, you can choose an alternate data input source from the Variant block.
For more information, see NASA HL-20 with FlightGear Interface

R2012b

Version: 3.10
New Features: Yes
Bug Fixes: Yes

Flight simulator interface block support for FlightGear versions 2.4 and 2.6

These blocks have been updated to support FlightGear Versions 2.4 and 2.6:

- FlightGear Preconfigured 6DoF Animation
- Generate Run Script
- Pack net_fdm Packet for FlightGear
- Receive net_ctrl Packet from FlightGear
- Unpack net_ctrl Packet from FlightGear

The Aerospace Blockset™ product now supports FlightGear Versions 2.6 and 2.4.

For more information on working with FlightGear, see Flight Simulator Interface.

Crossover Pilot Model, Precision Pilot Model, and Tustin Pilot Model blocks for modeling human pilots

The new Pilot library contains blocks that represent a human pilot:

- Tustin Pilot Model
- Crossover Pilot Model
- Precision Pilot Model

R2012a

Version: 3.9
New Features: Yes
Bug Fixes: No

Updated Actuator Blocks

The actuator blocks have improved dynamic behavior and give you more control over initial conditions. For more information, see "Blocks and Block Elements Being Removed" on page 16.

Support for Bidirectional Communication Between FlightGear and Simulink

Using UDP packets, the Aerospace Blockset software can now send and receive data between a Simulink® model and a running FlightGear Flight Simulator. The Aerospace Blockset software has been updated with new and updated blocks.

- New blocks:

  - Receive net_ctrl Packet from FlightGear — Receives a network control and environment data packet net_ctrl from the simulation of a Simulink model in the FlightGear simulator.

  - Unpack net_ctrl Packet from FlightGear — Unpacks net_ctrl variable packets received from FlightGear and makes them available for the Simulink environment.

- Updated block Generate Run Script, with the following new parameters:

  - **Select target architecture**

  - **FlightGear data flow**

  - **Origin address**

  - **Origin port**

Blocks and Block Elements Being Removed
Compatibility Considerations: Yes

Block or Block Element Name	What Happens When You Use the Block or Element?	Use This Block or Block Element Instead
Second Order Linear Actuator	Still works. Help button redirects to Linear Second-Order Actuator block.	Linear Second-Order Actuator
Second Order Nonlinear Actuator	Still works. Help button redirects to Nonlinear Second-Order Actuator block.	Nonlinear Second-Order Actuator

Updated Example

The `NASA HL-20 with FlightGear Interface` has been updated to show how you can receive FlightGear Flight Simulator data into a Simulink model.

Using FlightGear Version 2.4.0 with Aerospace Blockset Software

Version 3.9 of Aerospace Blockset software does not support FlightGear Version 2.4.0. You can use this procedure to modify your FlightGear installation to use FlightGear Version 2.4.0:

1 In the Simulink model, if it contains these blocks, double-click them: FlightGear Preconfigured 6DoF Animation, Pack net_fdm Packet for FlightGear, Receive net_ctrl Packet from FlightGear, Unpack net_ctrl Packet from FlightGear.

The block parameter dialog box opens.

2 In the **FlightGear version** parameter, select `v2.0`.

3 In the Simulink model, double-click the Generate Run Script block.

4 In the **FlightGear base directory** parameter, set the FlightGear base folder to the location of FlightGear Version 2.4.0.

5 Click the **Generate Script** button.

The block creates a custom FlightGear run script.

6 If you use the Receive net_ctrl Packet from FlightGear, or Unpack net_ctrl Packet from FlightGear, open the custom FlightGear run script with a text editor and change the input parameter `'--fdm'` parameter. In the run script, look for the following string:

```
--fdm=network,localhost,5501,5502,5503
```

Change this string:

```
--fdm=null --native-fdm=socket,in,30,127.0.0.1,5502,udp
```

7 Save and close this file.

For more information on working with FlightGear, see Introducing the Flight Simulator Interface in the Aerospace Blockset User's Guide.

R2011b

Version: 3.8
New Features: Yes
Bug Fixes: No

Conversion of Error and Warning Message Identifiers
Compatibility Considerations: Yes

For R2011b, error and warning message identifiers have changed in Aerospace Blockset.

Compatibility Considerations

If you have scripts or functions that use message identifiers that changed, you must update the code to use the new identifiers. Typically, message identifiers are used to turn off specific warning messages.

For example, the `aeroblk:sltranslate` identifier has changed to `aeroblks:sltranslate:invalidVersion`. If your code checks for `aeroblk:sltranslate`, you must update it to check for `aeroblks:sltranslate:invalidVersion` instead.

To determine the identifier for a warning, run the following command just after you see the warning:

```
[MSG,MSGID] = lastwarn;
```

This command saves the message identifier to the variable *MSGID*.

Note Warning messages indicate a potential issue with your code. While you can turn off a warning, a suggested alternative is to change your code so it runs warning-free.

Efficient C Code Generation

With the code reuse functionality from Simulink Coder™, the Aerospace Blockset software now has efficient C code generation for all blocks. In previous releases, you could not reuse generated code.

Blocks and Block Elements Being Removed
Compatibility Considerations: Yes

Blocks or Block Element Names	What Happens When You Use the Block or Element?	Use These Blocks or Block Element Names Instead	Compatibility Considerations
World Magnetic Model 2000	Nothing.	For model years between 2000 and the start of 2010, use International Geomagnetic Reference Field 11. For model years between 2010 and the start of 2015, use World Magnetic Model 2010.	For model years between 2000 and the start of 2010, use International Geomagnetic Reference Field 11. For model years between 2010 and the start of 2015, use World Magnetic Model 2010.
World Magnetic Model 2005	Nothing.	For model years between 2000 and the start of 2010, use International Geomagnetic Reference Field 11. For model years between 2010 and the start of 2015, use World Magnetic Model 2010.	For model years between 2000 and the start of 2010, use International Geomagnetic Reference Field 11. For model years between 2010 and the start of 2015, use World Magnetic Model 2010.

R2011a

Version: 3.7
New Features: Yes
Bug Fixes: No

New LLA to Flat Earth Block

The LLA to Flat Earth block estimates the flat Earth position from geodetic latitude, longitude, and altitude.

New International Geomagnetic Reference Field 11 Block

The International Geomagnetic Reference Field 11 block calculates the Earth's magnetic field and secular variation using the eleventh generation of the International Geomagnetic Reference Field.

Spherical Harmonic Gravity Model Supports New Planet Model

The Spherical Harmonic Gravity Model block now supports the EIGEN-GL04C gravity field model.

Simulink Coder Inlined Code Generation
Compatibility Considerations: Yes

The following blocks now generate inlined code for all targets:

- COESA Atmosphere Model

- Pressure Altitude

- Non-Standard Day 210C

- Non-Standard Day 310

- NRLMSISE-00 Atmosphere Model

- WGS84 Gravity Model

- Spherical Harmonic Gravity Model

In previous releases, if your model contained these blocks, you needed to perform the following to generate code:

- In the Simulink Configurations Parameters pane, select the **Support: non-inlined S-functions** check box on the **Code Generation > Interface** pane.

- Include other source files to generate code.

Compatibility Considerations

You can now generate code directly from models that contain these blocks. To use existing models:

- In the Simulink Configurations Parameters pane, clear the **Support: non-inlined S-functions** check box on the **Code Generation > Interface** pane.

- Do not include the other source files you previously included to generate code for your model.

Aerospace Blockset Product Now in Simulink Start, Help, and Demos Category
Compatibility Considerations: Yes

The Simulink category now contains the Aerospace Blockset software product.

Compatibility Considerations

This change impacts you in the following ways:

- Finding and viewing this product through the MATLAB® Desktop **Start** button and in the Help browser **Contents** and **Demos** panes.

- Using the demo command to access the product demos.

R2010b

Version: 3.6
New Features: Yes
Bug Fixes: No

New Geoid Height Block

The Geoid Height block calculates the height of geoid undulations using one of three geopotential models.

FlightGear Version 2.0 with Aerospace Blockset Software

The Aerospace Blockset product now supports FlightGear Version 2.0.

For more information on working with FlightGear, see Introducing the Flight Simulator Interface in the Aerospace Blockset User's Guide.

Blocks and Block Elements Being Removed
Compatibility Considerations: Yes

Block or Block Element Name	What Happens When You use the Block or Element?	Use This Instead	Compatibility Considerations
EGM96 Geoid	Still works. Help button redirects to Geoid Height block.	Geoid Height	Replace all existing instances of EGM96 Geoid with Geoid Height.
SinCos	Get Simulink Trigonometric Function block behavior. Help button redirects to Trigonometric Function block.	Trigonometric Function	Replace all existing instances of SinCos with Trigonometric Function.

R2010a

Version: 3.5
New Features: Yes
Bug Fixes: Yes

New Centrifugal Effect Model Block

The Centrifugal Effect Model block implements the gravity centrifugal effect
for eight planets and the Moon, plus the capability to customize this effect.

New Spherical Harmonic Gravity Model Block

The Spherical Harmonic Gravity Model block implements the spherical harmonic gravity models for Earth (EGM2008, EGM96), Moon (LP100K, LP165P), and Mars (GMM2B), plus the capability to customize these models.

New World Magnetic Model 2010 Block

The World Magnetic Model 2010 block implements the world magnetic model
for years 2010-2015 (WMM-2010).

Demo

The following demo is new:

Gravity Models with Precessing Reference Frame — Illustrates various gravity models with precessing reference frames implemented with the Aerospace Blockset blocks.

Support for the Simulink For Each Subsystem Block

The Aerospace Blockset product now supports the Simulink For Each
Subsystem within the limitations of that subsystem.

R2009b

Version: 3.4
New Features: Yes
Bug Fixes: Yes

New Zonal Harmonic Gravity Model Block

The Zonal Harmonic Gravity Model block implements the zonal harmonic gravity model.

FlightGear Version 1.9.1 with Aerospace Blockset Software

Aerospace Blockset Version 3.4 now supports FlightGear Version 1.9.1.

For more information on working with FlightGear, see Introducing the Flight Simulator Interface in the Aerospace Blockset User's Guide.

Using the Send net_fdm Packet to FlightGear Block to Communicate with xPC Target Applications

The Send net_fdm Packet to FlightGear block now supports xPC Target™ applications.

In previous releases, you could not use the Send net_fdm Packet to FlightGear block to communicate with xPC Target applications. Instead, you had to replace the Aerospace Blockset Send net_fdm Packet to FlightGear with the xPC Target UDP Send block.

R2009a

Version: 3.3
New Features: Yes
Bug Fixes: Yes

Enhanced Invert 3x3 Matrix Block Inverse Calculation

The Invert 3x3 Matrix block no longer uses the determinant and adjoint to calculate the inverse. It now uses the Product block.

Saving and Restoring the Complete SimState

Use the new SimState feature to save the complete simulation state. Unlike the final states stored in earlier versions of Simulink, the SimState contains the complete simulation state of the model (including block states that are logged). You can then restore the state at a later time and continue simulation from the exact instant at which you stopped the simulation. See Saving and Restoring the Simulation State as the SimState in the Simulink User's Guide.

Using FlightGear Version 1.9.0 with Aerospace Blockset Software

Version 3.3 of Aerospace Blockset software does not support FlightGear Version 1.9.0. You can use this procedure.

1 In the Simulink model, double-click the FlightGear Preconfigured 6DoF Animation block or the Pack net_fdm Packet for FlightGear block.

The block parameter dialog box is displayed.

2 In the **FlightGear version** parameter, select `v1.0`.

3 In the Simulink model, double-click the Generate Run Script block.

The block parameter dialog box is displayed.

4 In the **FlightGear base directory** parameter, set the FlightGear base folder to the location of FlightGear Version 1.9.0.

5 Click the **Generate Script** button.

The block creates a custom FlightGear run script.

6 Open the custom FlightGear run script with a text editor and change the input parameter `'--airport-id='` to `'--airport='`.

7 Save and close this file.

For more information on working with FlightGear, see Introducing the Flight Simulator Interface in the Aerospace Blockset User's Guide.

R2008b

Version: 3.2
New Features: Yes
Bug Fixes: Yes

FlightGear Version 1.0 with Aerospace Blockset Software

Aerospace Blockset Version 3.2 now supports FlightGear Version 1.0. To access this version of FlightGear, you can use this procedure.

1 In the Simulink model, double-click the FlightGear Preconfigured 6DoF Animation block or the Pack net_fdm Packet for FlightGear block.

The block parameter dialog box appears.

2 In the **FlightGear version** parameter, select v1.0.

3 In the Simulink model, double-click the Generate Run Script block.

The block parameter dialog box appears.

4 In the **FlightGear base directory** parameter, set the FlightGear base folder to the location of FlightGear Version 1.0.

For more information on working with FlightGear, see Introducing the Flight Simulator Interface in the Aerospace Blockset User's Guide.

Updated Aerospace Blockset Blocks

The following blocks have been updated to support FlightGear Version 1.0:

- FlightGear Preconfigured 6DoF Animation
- Pack net_fdm Packet for FlightGear
- Send net_fdm Packet to FlightGear

R2008a

Version: 3.1
New Features: Yes
Bug Fixes: Yes

Quaternion Support for the Embedded MATLAB Function Block

You can now access the following quaternion functions through the Embedded MATLAB Function block:

- quatconj
- quatinv
- quatmod
- quatmultiply
- quatdivide
- quatnorm
- quatnormalize

New Aerospace Blockset Demos

The Aerospace Blockset product has the following new demos:

- `asbSkyHogg`, which illustrates the design of a lightweight airplane.
- `asbQuatEML`, which illustrates a quaternion and models the equations.

Using FlightGear Version 1.0 with Aerospace Blockset Software

Version 3.1 of Aerospace Blockset software does not support FlightGear Version 1.0. You can use this procedure.

1 In the Simulink model, double-click the FlightGear Preconfigured 6DoF Animation block or the Pack net_fdm Packet for FlightGear block.

The block parameter dialog box is displayed.

2 In the **FlightGear version** parameter, select v0.9.10.

3 In the Simulink model, double-click the Generate Run Script block.

The block parameter dialog box is displayed.

4 In the **FlightGear base directory** parameter, set the FlightGear base folder to the location of FlightGear Version 1.0.

For more information on working with FlightGear, see Introducing the Flight Simulator Interface in the Aerospace Blockset User's Guide.

R2007b

Version: 3.0
New Features: Yes
Bug Fixes: Yes

Direction Cosine Matrix to Rotation Angles Block Replaces Direction Cosine Matrix to Euler Angle Block
Compatibility Considerations: Yes

The Direction Cosine Matrix to Rotation Angles block converts spatial representation from direction cosine matrix to any of 12 standard sequences of rotation angles.

Compatibility Considerations

The Direction Cosine Matrix to Euler Angle block is deprecated. Models built with the old block continue to be supported from an obsolete library that ships with the Aerospace Blockset product but is not visible in the Library Browser.

Rotation Angles to Direction Cosine Matrix Block Replaces Euler Angle to Direction Cosine Block
Compatibility Considerations: Yes

The Rotation Angles to Direction Cosine Matrix block converts spatial representation from any of 12 standard sequences of rotation angles to direction cosine matrix.

Compatibility Considerations

The Euler Angle to Direction Cosine Matrix block is deprecated. Models built with the old block continue to be supported from an obsolete library that ships with the Aerospace Blockset product but is not visible in the Library Browser.

New CIRA-86 Atmosphere Model Block

The CIRA-86 Atmosphere Model block implements the COSPAR International Reference Atmosphere (CIRA) 1986 environmental model.

New NRLMSISE-00 Atmosphere Model Block

The NRLMSISE-00 Atmosphere Model block implements the 2001 United States Naval Research Laboratory Mass Spectrometer and Incoherent Scatter Radar Exosphere (NRLMSISE) environmental model.

New EGM96 Geoid Block

The EGM96 Geoid block implements the 1996 Earth Geopotential Model (EGM96).

Quaternions to Rotation Angles Block Replaces Quaternions to Euler Angles Block
Compatibility Considerations: Yes

The Quaternions to Rotation Angles block converts spatial representation from quaternions to any of 12 standard sequences of rotation angles.

Compatibility Considerations

The Quaternions to Euler Angles block is deprecated. Models built with the old block continue to be supported from an obsolete library that ships with the Aerospace Blockset software but is not visible in the Library Browser.

Rotation Angles to Quaternions Block Replaces Euler Angles to Quaternions Block
Compatibility Considerations: Yes

The Rotation Angles to Quaternions block converts spatial representation from any of 12 standard sequences of rotation angles to quaternions.

Compatibility Considerations

The Euler Angles to Quaternions block is deprecated. Models built with the old block continue to be supported from an obsolete library that ships with the Aerospace Blockset software but is not visible in the Library Browser.

Enhanced HL-20 Demo

The HL-20 demo (`aeroblk_HL20`) control system has been enhanced.

R2007a

Version: 2.3
New Features: Yes
Bug Fixes: Yes

New MATLAB Animation Block

The MATLAB Animation block creates a six-degrees-of-freedom animation of multiple bodies that have custom geometries. It is based on the `Aero.Animation` object.

New Pilot Joystick All Block

The Pilot Joystick All block provides a joystick interface on Windows®
platforms. This block is the same as Pilot Joystick, but its Output
configuration parameter is set by default to AllOutputs. It outputs six
analog channels, buttons, and point of view indicators.

WGS84 Gravity Model Block Modified
Compatibility Considerations: Yes

The first input of the WGS84 Gravity Model block is now a three-signal vector that contains the position in geodetic latitude, longitude, and altitude. The second optional input is now a scalar that contains the manually-specified Julian centuries. The WGS84 Gravity Model block also has new output coordinates and dimensions to output the gravity vector in NED coordinates.

Compatibility Considerations

The old WGS84 Gravity Model block is deprecated. Models built with the old block continue to be supported from an obsolete library that ships with the Aerospace Blockset product but is not visible in the Library Browser. To use the new version of the WGS84 Gravity Model block, you must replace the old WGS84 Gravity Model block from the Environment/Gravity library and reconnect the input to take into account the three-signal vector format.

New Aerospace Blockset Demo

The Aerospace Blockset product has a new demo, Multiple Unmanned Air Vehicles with Collaborative Control, which illustrates the use of the MATLAB Animation block.

R2006b

Version: 2.2
New Features: Yes
Bug Fixes: Yes

Aerospace Toolbox Product Replaces Control System Toolbox Product as Requirement for Aerospace Blockset Product

The new Aerospace Toolbox product is now required to use the Aerospace Blockset software. See the Aerospace Toolbox User's Guide for more information.

The Control System Toolbox product is no longer required for the Aerospace Blockset product. It is recommended for certain applications and still required for certain blocks.

Interpolate Matrix Blocks Modified

The Interpolate Matrix(x), Interpolate Matrix(x,y), and Interpolate Matrix(x,y,z) blocks have been modified to accept the new Simulink Prelookup block output. The Interpolate Matrix blocks inputs have been doubled in number. You must now provide the interpolation index and interpolation fraction as separate input signals.

The old Interpolate Matrix and Prelookup blocks are deprecated. Models built with the old blocks continue to be supported from the Aerospace Blockset and Simulink obsolete libraries, but not visible in the Library Browser.

Aerodynamic Forces and Moments Block Extended

The Aerodynamic Forces and Moments block has been extended to allow calculations in the stability and wind axes, in addition to the body axes.

To preserve backward compatibility, the default state of the block assumes a body-body transformation and hides the body velocity input port. If you change this default to stability or wind axes, the body velocity port appears.

New Digital DATCOM Forces and Moments Block

The Digital DATCOM Forces and Moments block calculates aerodynamic forces and moments using the Digital DATCOM static and dynamic stability derivatives and coefficients.

FlightGear Version 0.9.10 Is Supported by FlightGear Simulator Interface

The FlightGear simulator interface now supports the standard binary distributions of FlightGear version 0.9.10 on all platforms.

The FlightGear Preconfigured 6DoF Animation and Pack net_fdm Packet for FlightGear blocks have been updated accordingly, as have the `asbh120` and `asbdhc2` demos.

Pack net_fdm Packet for FlightGear Now Supports Code Generation

With Real-Time Workshop®, the Pack net_fdm Packet for FlightGear block now generates code for all targets, including xPC Target.

The Send net_fdm Packet to FlightGear and FlightGear Preconfigured 6DoF Animation blocks now generate valid but nonfunctional code. For simulating with FlightGear on an xPC Target computer, use the Pack net_fdm Packet for FlightGear block with the UDP Send block from the xPC Target block library to route real-time simulation data to a running FlightGear session.

New SimViewingDevice Block

The FlightGear Preconfigured 6DoF Animation block is now a
SimViewingDevice. You can use this block when you have connected your
model to running target code using the Real-Time Workshop external mode.

R2006a

Version: 2.1
New Features: Yes
Bug Fixes: No

FlightGear Version 0.9.9 Is Supported by FlightGear Simulator Interface

FlightGear Simulator Interface now supports the standard binary distributions of FlightGear version 0.9.9 on all platforms.

The FlightGear Preconfigured 6DoF Animation and Pack net_fdm Packet for FlightGear blocks have been updated accordingly.

3DoF Animation and 6DoF Animation Blocks Support Code Generation

The 3DoF Animation and 6DoF Animation blocks are now SimViewingDevices. You can view outputs with these blocks when you have connected your model to running target code using the Real-Time Workshop external mode.

R14SP3

Version: 2.0.1
New Features: No
Bug Fixes: No

No New Features or Changes

R14SP2+

Version: 2.0
New Features: Yes
Bug Fixes: No

Flight Simulator Interface

Aerospace Blockset Software Version 2.0 supports an interface to the third-party FlightGear Flight Simulator, an open source flight simulator software package. You can obtain the FlightGear Flight Simulator from `www.flightgear.org`.

The simulator interface included with the Aerospace Blockset software is a unidirectional transmission from the Simulink software to FlightGear using FlightGear's published `net_fdm` binary data exchange specification transmitted via UDP network packets to a running instance of FlightGear.

The Aerospace Blockset product currently supports the standard binary distributions of FlightGear versions 0.9.3 and 0.9.8a on all platforms.

Note There is a known problem with FlightGear running on Macintosh, where Weight on Wheels (wow) is 4 bytes, as opposed to other platforms where it is 1 byte. As a result, the Aerospace Blockset product might experience trouble communicating with FlightGear if you are running FlightGear on Macintosh, and if you are using any of the following parameters:

- wow
- gear_pos
- gear_steer
- gear_compression
- agl
- cur_time
- warp
- visibility

    For more information on the available parameters, see the reference page for the Pack net_fdm Packet for FlightGear block.

New Aerospace Blockset Blocks

The new Simulink blocks introduced in Aerospace Blockset Software Version 2.0 are listed below:

3DoF (Wind Axes)

6 DoF ECEF (Quaternion)

6DoF Wind (Quaternion)

6DoF Wind (Wind Angles)

Simple Variable Mass 3DoF (Wind Axes)

Simple Variable Mass 6 DoF ECEF (Quaternion)

Simple Variable Mass 6DoF Wind (Quaternion)

Simple Variable Mass 6DoF Wind (Wind Angles)

Custom Variable Mass 3DoF (Wind Axes)

Custom Variable Mass 6 DoF ECEF (Quaternion)

Custom Variable Mass 6DoF Wind (Quaternion)

Custom Variable Mass 6DoF Wind (Wind Angles)

4th Order Point Mass (Longitudinal)

4th Order Point Mass Forces (Longitudinal)

6th Order Point Mass (Coordinated Flight)

6th Order Point Mass Forces (Coordinated Flight)

Direction Cosine Matrix Body to Wind

Direction Cosine Matrix Body to Wind to Alpha and Beta

Direction Cosine Matrix ECEF to NED

Direction Cosine Matrix ECEF to NED to Latitude and Longitude

Direction Cosine Matrix to Wind Angles

ECEF Position to LLA

LLA to ECEF Position

Flat Earth to LLA

Geocentric to Geodetic Latitude

Geodetic to Geocentric Latitude

Radius at Geocentric Latitude

Wind Angles to Direction Cosine Matrix

Besselian Epoch to Julian Epoch

Julian Epoch to Besselian Epoch

FlightGear Preconfigured 6DoF Animation

Generate Run Script

Pack net_fdm Packet for FlightGear

Send net_fdm Packet to FlightGear

Pilot Joystick

Simulation Pace

Three-Axis Accelerometer

Three-Axis Gyroscope

Three-Axis Inertial Measurement Unit

Quaternion Conjugate

Quaternion Division

Quaternion Inverse

Quaternion Modulus

Quaternion Multiplication

Quaternion Norm

Quaternion Normalize

Quaternion Rotation

Wind Angular Rates

World Magnetic Model 2005

Mach Number and Dynamic Pressure Blocks Input
Compatibility Considerations: Yes

Previously the Mach Number and Dynamic Pressure blocks worked with airspeed as an input. This was not how the blocks were intended to work. Starting with this release, these blocks only accept velocity vectors as input.

Compatibility Considerations

The Mach Number and Dynamic Pressure blocks no longer accept airspeed as an input. Use velocity vectors as input for these blocks.

R14SP2

Version: 1.6.2
New Features: No
Bug Fixes: No

No New Features or Changes