

PlanetModel

5.0

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Chapter 1

Module Index

1.1 Modules

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Chapter 2

Namespace Index

2.1 Namespace List

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Chapter 3

Hierarchical Index

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Chapter 6

Module Documentation

6.1 Models

Modules

- [Environment](#)

6.1.1 Detailed Description

6.2 Environment

Modules

- [Planet](#)

6.2.1 Detailed Description

6.3 Planet

Files

- file [base_planet.hh](#)
Define the class BasePlanet.
- file [class_declarations.hh](#)
Forward declaration of classes defined in the planet model.
- file [planet.hh](#)
Planetary modeling constant parameter definitions.
- file [planet_messages.hh](#)
Define the class PlanetMessages, the class that specifies the message IDs used in the planet model.
- file [base_planet.cc](#)
Planet modeling class methods.
- file [planet.cc](#)
Planet modeling class methods.
- file [planet_messages.cc](#)
Implement the class PlanetMessages.

Namespaces

- [jeod](#)
Namespace jeod.

Macros

- `#define` [PATH](#) "environment/planet/"

6.3.1 Detailed Description

6.3.2 Macro Definition Documentation

6.3.2.1 `#define` [PATH](#) "environment/planet/"

Definition at line 39 of file planet_messages.cc.

Chapter 7

Namespace Documentation

7.1 jeod Namespace Reference

Namespace jeod.

Data Structures

- class [Planet_earth_default_data](#)
- class [Planet_jupiter_default_data](#)
- class [Planet_mars_default_data](#)
- class [Planet_moon_default_data](#)
- class [Planet_default_data](#)
- class [Planet_sun_default_data](#)
- class [BasePlanet](#)

A [BasePlanet](#) contains the base data needed to model a planet in JEOD.

- class [Planet](#)

Describes a planet with mass and shape.

- class [PlanetMessages](#)

Specifies the message IDs used in the planet model.

7.1.1 Detailed Description

Namespace jeod.

Chapter 8

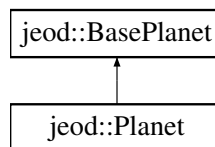
Data Structure Documentation

8.1 jeod::BasePlanet Class Reference

A [BasePlanet](#) contains the base data needed to model a planet in JEOD.

```
#include <base_planet.hh>
```

Inheritance diagram for jeod::BasePlanet:



Public Member Functions

- [BasePlanet](#) ()
Construct a [BasePlanet](#) object.
- virtual [~BasePlanet](#) ()=default
- void [set_name](#) (std::string name_in)
Setter for the name.
- virtual void [set_alt_inertial](#) (const double trans[3][3])
Set the fixed transformation from J2000 to alt_inertial.
- virtual void [set_alt_inertial](#) (const double cp[3], const double ep[3])
Use the celestial and ecliptic poles to set the conventional fixed transformation from J2000 to alt_inertial.
- virtual void [register_planet](#) (BaseEphemeridesManager &ephem_manager)
Register a [BasePlanet](#) object with the Ephemerides Manager.

Data Fields

- std::string [name](#)
[Planet](#) name.
- GravitySource * [grav_source](#)
The GravitySource corresponding to the same planet represented by this.
- EphemerisRefFrame [inertial](#)
The planet-centered J2000 pseudo-inertial frame associated with the planet represented by this.
- EphemerisRefFrame [alt_inertial](#)

A secondary pseudo-inertial frame which can be defined by the user to be equatorial for this planet.

- EphemerisRefFrame [prefix](#)

The planet-centered, planet-fixed Cartesian reference frame associated with the planet represented by this.

Protected Attributes

- bool [alt_inertial_set](#)

Flag to insure the alt_inertial frame is set only once.

Private Member Functions

- [BasePlanet](#) (const [BasePlanet](#) &)
Not implemented.
- [BasePlanet](#) & [operator=](#) (const [BasePlanet](#) &)
Not implemented.

Friends

- class [InputProcessor](#)
- void [init_attrjeod__BasePlanet](#) ()

8.1.1 Detailed Description

A [BasePlanet](#) contains the base data needed to model a planet in JEOD.

A [BasePlanet](#) has a name, a planet-centered inertial reference frame, and a planet-centered planet-fixed reference frame. Details of the planet's shape and mass are in the [Planet](#) class, which derives from [BasePlanet](#).

Definition at line 59 of file base_planet.hh.

8.1.2 Constructor & Destructor Documentation

8.1.2.1 `jeod::BasePlanet::BasePlanet (void)`

Construct a [BasePlanet](#) object.

Definition at line 58 of file base_planet.cc.

8.1.2.2 `virtual jeod::BasePlanet::~~BasePlanet () [virtual], [default]`

8.1.2.3 `jeod::BasePlanet::BasePlanet (const BasePlanet &) [private]`

Not implemented.

8.1.3 Member Function Documentation

8.1.3.1 `BasePlanet& jeod::BasePlanet::operator= (const BasePlanet &) [private]`

Not implemented.

8.1.3.2 `void jeod::BasePlanet::register_planet (BaseEphemeridesManager & ephemerides_manager) [virtual]`

Register a [BasePlanet](#) object with the Ephemerides Manager.

Parameters

<i>in</i> , <i>out</i>	<i>ephem_manager</i>	Ephemerides Manager
------------------------	----------------------	---------------------

Definition at line 124 of file base_planet.cc.

References alt_inertial, inertial, name, jeod::PlanetMessages::name_error, and pfix.

Referenced by jeod::Planet::register_model().

8.1.3.3 void jeod::BasePlanet::set_alt_inertial (const double *trans*[3][3]) [virtual]

Set the fixed transformation from J2000 to alt_inertial.

Assumptions and Limitations

- Method only works once

Parameters

<i>in</i>	<i>trans</i>	trans J2000->alt_inertial
-----------	--------------	---------------------------

Definition at line 77 of file base_planet.cc.

References alt_inertial, and alt_inertial_set.

Referenced by jeod::Planet_mars_default_data::initialize(), and set_alt_inertial().

8.1.3.4 void jeod::BasePlanet::set_alt_inertial (const double *cp*[3], const double *ep*[3]) [virtual]

Use the celestial and ecliptic poles to set the conventional fixed transformation from J2000 to alt_inertial.

Assumptions and Limitations

- Method only works once
- Celestial and ecliptic poles are not the same

Parameters

<i>in</i>	<i>cp</i>	celestial pole unit vector
<i>in</i>	<i>ep</i>	Ecliptic pole unit vector

Definition at line 105 of file base_planet.cc.

References set_alt_inertial().

8.1.3.5 void jeod::BasePlanet::set_name (std::string *name_in*) [inline]

Setter for the name.

Definition at line 109 of file base_planet.hh.

8.1.4 Friends And Related Function Documentation

8.1.4.1 void init_attrjeod__BasePlanet () [friend]

8.1.4.2 friend class InputProcessor [friend]

Definition at line 61 of file base_planet.hh.

8.1.5 Field Documentation

8.1.5.1 EphemerisRefFrame jeod::BasePlanet::alt_inertial

A secondary pseudo-inertial frame which can be defined by the user to be equatorial for this planet.

trick_units(—)

Definition at line 88 of file base_planet.hh.

Referenced by register_planet(), and set_alt_inertial().

8.1.5.2 bool jeod::BasePlanet::alt_inertial_set [protected]

Flag to insure the alt_inertial frame is set only once.

trick_units(—)

Definition at line 129 of file base_planet.hh.

Referenced by set_alt_inertial().

8.1.5.3 GravitySource* jeod::BasePlanet::grav_source

The GravitySource corresponding to the same planet represented by this.

trick_units(—)

Definition at line 76 of file base_planet.hh.

Referenced by jeod::Planet::initialize(), and jeod::Planet::register_model().

8.1.5.4 EphemerisRefFrame jeod::BasePlanet::inertial

The planet-centered J2000 pseudo-inertial frame associated with the planet represented by this.

trick_units(—)

Definition at line 82 of file base_planet.hh.

Referenced by jeod::Planet::register_model(), and register_planet().

8.1.5.5 std::string jeod::BasePlanet::name

[Planet](#) name.

trick_units(—)

Definition at line 70 of file base_planet.hh.

Referenced by jeod::Planet_earth_default_data::initialize(), jeod::Planet_mars_default_data::initialize(), jeod::Planet_sun_default_data::initialize(), jeod::Planet_moon_default_data::initialize(), jeod::Planet_jupiter_default_data::initialize(), jeod::Planet::initialize(), jeod::Planet::register_model(), and register_planet().

8.1.5.6 EphemerisRefFrame jeod::BasePlanet::pfix

The planet-centered, planet-fixed Cartesian reference frame associated with the planet represented by this.

trick_units(—)

Definition at line 94 of file base_planet.hh.

Referenced by jeod::Planet::register_model(), and register_planet().

The documentation for this class was generated from the following files:

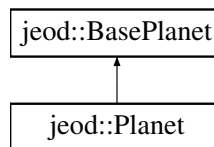
- [base_planet.hh](#)
- [base_planet.cc](#)

8.2 jeod::Planet Class Reference

Describes a planet with mass and shape.

```
#include <planet.hh>
```

Inheritance diagram for jeod::Planet:



Public Member Functions

- [Planet](#) ()
Construct a [Planet](#) object.
- [~Planet](#) ()
Destruct a [Planet](#) object.
- void [register_model](#) (GravitySource &[grav_source](#), BaseDynManager &dyn_manager)
Register a [Planet](#) object with the Dynamics Manager.
- void [initialize](#) ()
Initialize a [Planet](#) object.

Data Fields

- double [r_eq](#)
Mean planet equatorial radius.
- double [r_pol](#)
Mean planet polar radius.
- double [e_ellipsoid](#)
[Planet](#) ellipsoid eccentricity, a value between 0 and 1.
- double [e_ellip_sq](#)
The square of the planet ellipsoid eccentricity.
- double [flat_coeff](#)
[Planet](#) ellipsoid flattening coefficient, a value between 0 and 1.
- double [flat_inv](#)
Inverse of the planet ellipsoid flattening constant above.

Private Member Functions

- [Planet](#) (const [Planet](#) &frame)
- [Planet](#) & [operator=](#) (const [Planet](#) &frame)

Friends

- class [InputProcessor](#)
- void [init_attrjeod__Planet](#) ()

Additional Inherited Members

8.2.1 Detailed Description

Describes a planet with mass and shape.

Definition at line 69 of file planet.hh.

8.2.2 Constructor & Destructor Documentation

8.2.2.1 `jeod::Planet::Planet (void)`

Construct a [Planet](#) object.

Definition at line 62 of file planet.cc.

8.2.2.2 `jeod::Planet::~~Planet (void)`

Destruct a [Planet](#) object.

Definition at line 79 of file planet.cc.

8.2.2.3 `jeod::Planet::Planet (const Planet & frame) [private]`

8.2.3 Member Function Documentation

8.2.3.1 `void jeod::Planet::initialize (void)`

Initialize a [Planet](#) object.

Assumptions and Limitations

- [Planet::register_model](#) has already been invoked.

Definition at line 127 of file planet.cc.

References [jeod::PlanetMessages::domain_error](#), [e_ellip_sq](#), [e_ellipsoid](#), [flat_coeff](#), [flat_inv](#), [jeod::BasePlanet::grav_source](#), [jeod::BasePlanet::name](#), [jeod::PlanetMessages::name_error](#), [r_eq](#), [r_pol](#), and [jeod::PlanetMessages::registration_error](#).

8.2.3.2 `Planet& jeod::Planet::operator= (const Planet & frame) [private]`

8.2.3.3 `void jeod::Planet::register_model (GravitySource & grav_source_in, BaseDynManager & dyn_manager)`

Register a [Planet](#) object with the Dynamics Manager.

Parameters

<code>in, out</code>	<code>grav_source_in</code>	GravitySource object
<code>in, out</code>	<code>dyn_manager</code>	Dynamics manager

Definition at line 91 of file planet.cc.

References `jeod::BasePlanet::grav_source`, `jeod::BasePlanet::inertial`, `jeod::BasePlanet::name`, `jeod::PlanetMessages::name_error`, `jeod::BasePlanet::pfix`, and `jeod::BasePlanet::register_planet()`.

8.2.4 Friends And Related Function Documentation

8.2.4.1 `void init_attrjeod_Planet () [friend]`

8.2.4.2 `friend class InputProcessor [friend]`

Definition at line 71 of file planet.hh.

8.2.5 Field Documentation

8.2.5.1 `double jeod::Planet::e_ellip_sq`

The square of the planet ellipsoid eccentricity.

`trick_units(-)`

Definition at line 96 of file planet.hh.

Referenced by `initialize()`.

8.2.5.2 `double jeod::Planet::e_ellipsoid`

[Planet](#) ellipsoid eccentricity, a value between 0 and 1.

NOTE: This parameter relates to the planet's shape, not its orbit.`trick_units(-)`

Definition at line 91 of file planet.hh.

Referenced by `initialize()`.

8.2.5.3 `double jeod::Planet::flat_coeff`

[Planet](#) ellipsoid flattening coefficient, a value between 0 and 1.

The Earth's flattening, for example, is about 1/298.3.`trick_units(-)`

Definition at line 102 of file planet.hh.

Referenced by `jeod::Planet_jupiter_default_data::initialize()`, `jeod::Planet_sun_default_data::initialize()`, `jeod::Planet_mars_default_data::initialize()`, `jeod::Planet_moon_default_data::initialize()`, and `initialize()`.

8.2.5.4 `double jeod::Planet::flat_inv`

Inverse of the planet ellipsoid flattening constant above.

`trick_units(-)`

Definition at line 107 of file planet.hh.

Referenced by `jeod::Planet_earth_default_data::initialize()`, and `initialize()`.

8.2.5.5 double jeod::Planet::r_eq

Mean planet equatorial radius.

trick_units(m)

Definition at line 80 of file planet.hh.

Referenced by jeod::Planet_earth_default_data::initialize(), jeod::Planet_sun_default_data::initialize(), jeod::Planet_jupiter_default_data::initialize(), jeod::Planet_moon_default_data::initialize(), jeod::Planet_mars_default_data::initialize(), and initialize().

8.2.5.6 double jeod::Planet::r_pol

Mean planet polar radius.

trick_units(m)

Definition at line 85 of file planet.hh.

Referenced by initialize().

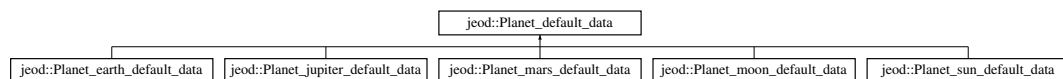
The documentation for this class was generated from the following files:

- [planet.hh](#)
- [planet.cc](#)

8.3 jeod::Planet_default_data Class Reference

```
#include <planet_default_data.hh>
```

Inheritance diagram for jeod::Planet_default_data:



Public Member Functions

- virtual void [initialize](#) ([Planet](#) *)=0
- virtual [~Planet_default_data](#) ()

8.3.1 Detailed Description

Definition at line 14 of file planet_default_data.hh.

8.3.2 Constructor & Destructor Documentation

8.3.2.1 virtual jeod::Planet_default_data::~~Planet_default_data () [inline], [virtual]

Definition at line 17 of file planet_default_data.hh.

8.3.3 Member Function Documentation

8.3.3.1 virtual void jeod::Planet_default_data::initialize (Planet *) [pure virtual]

Implemented in [jeod::Planet_earth_default_data](#), [jeod::Planet_jupiter_default_data](#), [jeod::Planet_mars_default_data](#), [jeod::Planet_moon_default_data](#), and [jeod::Planet_sun_default_data](#).

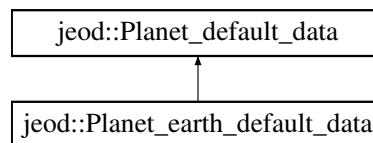
The documentation for this class was generated from the following file:

- [planet_default_data.hh](#)

8.4 jeod::Planet_earth_default_data Class Reference

```
#include <earth.hh>
```

Inheritance diagram for jeod::Planet_earth_default_data:



Public Member Functions

- virtual void [initialize](#) (Planet *)

8.4.1 Detailed Description

Definition at line 18 of file earth.hh.

8.4.2 Member Function Documentation

8.4.2.1 void jeod::Planet_earth_default_data::initialize (Planet * Planet_ptr) [virtual]

Implements [jeod::Planet_default_data](#).

Definition at line 36 of file earth.cc.

References [jeod::Planet::flat_inv](#), [jeod::BasePlanet::name](#), and [jeod::Planet::r_eq](#).

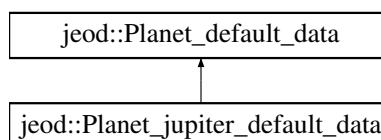
The documentation for this class was generated from the following files:

- [earth.hh](#)
- [earth.cc](#)

8.5 jeod::Planet_jupiter_default_data Class Reference

```
#include <jupiter.hh>
```

Inheritance diagram for jeod::Planet_jupiter_default_data:



Public Member Functions

- virtual void [initialize](#) ([Planet](#) *)

8.5.1 Detailed Description

Definition at line 18 of file jupiter.hh.

8.5.2 Member Function Documentation

8.5.2.1 void [jeod::Planet_jupiter_default_data::initialize](#) ([Planet](#) * *Planet_ptr*) [virtual]

Implements [jeod::Planet_default_data](#).

Definition at line 36 of file jupiter.cc.

References [jeod::Planet::flat_coeff](#), [jeod::BasePlanet::name](#), and [jeod::Planet::r_eq](#).

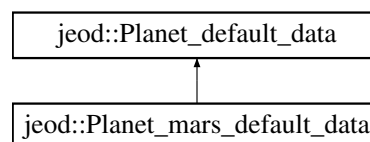
The documentation for this class was generated from the following files:

- [jupiter.hh](#)
- [jupiter.cc](#)

8.6 jeod::Planet_mars_default_data Class Reference

```
#include <mars.hh>
```

Inheritance diagram for [jeod::Planet_mars_default_data](#):



Public Member Functions

- virtual void [initialize](#) ([Planet](#) *)

8.6.1 Detailed Description

Definition at line 18 of file mars.hh.

8.6.2 Member Function Documentation

8.6.2.1 void [jeod::Planet_mars_default_data::initialize](#) ([Planet](#) * *Planet_ptr*) [virtual]

Implements [jeod::Planet_default_data](#).

Definition at line 36 of file mars.cc.

References [jeod::Planet::flat_coeff](#), [jeod::BasePlanet::name](#), [jeod::Planet::r_eq](#), and [jeod::BasePlanet::set_alt_inertial\(\)](#).

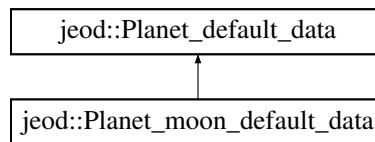
The documentation for this class was generated from the following files:

- [mars.hh](#)
- [mars.cc](#)

8.7 jeod::Planet_moon_default_data Class Reference

```
#include <moon.hh>
```

Inheritance diagram for jeod::Planet_moon_default_data:



Public Member Functions

- virtual void [initialize](#) ([Planet](#) *)

8.7.1 Detailed Description

Definition at line 18 of file moon.hh.

8.7.2 Member Function Documentation

8.7.2.1 void jeod::Planet_moon_default_data::initialize ([Planet](#) * *Planet_ptr*) [virtual]

Implements [jeod::Planet_default_data](#).

Definition at line 36 of file moon.cc.

References [jeod::Planet::flat_coeff](#), [jeod::BasePlanet::name](#), and [jeod::Planet::r_eq](#).

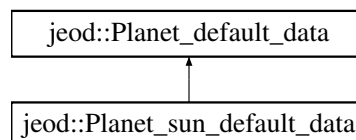
The documentation for this class was generated from the following files:

- [moon.hh](#)
- [moon.cc](#)

8.8 jeod::Planet_sun_default_data Class Reference

```
#include <sun.hh>
```

Inheritance diagram for jeod::Planet_sun_default_data:



Public Member Functions

- virtual void [initialize](#) ([Planet](#) *)

8.8.1 Detailed Description

Definition at line 18 of file sun.hh.

8.8.2 Member Function Documentation

8.8.2.1 void jeod::Planet_sun_default_data::initialize (Planet * Planet_ptr) [virtual]

Implements [jeod::Planet_default_data](#).

Definition at line 38 of file sun.cc.

References [jeod::Planet::flat_coeff](#), [jeod::BasePlanet::name](#), and [jeod::Planet::r_eq](#).

The documentation for this class was generated from the following files:

- [sun.hh](#)
- [sun.cc](#)

8.9 jeod::PlanetMessages Class Reference

Specifies the message IDs used in the planet model.

```
#include <planet_messages.hh>
```

Static Public Attributes

- static char const * [name_error](#) = "environment/planet/" "name_error"
Issued when the name is invalid.
- static char const * [registration_error](#) = "environment/planet/" "registration_error"
Issued when the model has not been properly registered/initialized.
- static char const * [domain_error](#) = "environment/planet/" "domain_error"
Issued when some value is invalid.

Private Member Functions

- [PlanetMessages](#) (void)
- [PlanetMessages](#) (const [PlanetMessages](#) &)
- [PlanetMessages](#) & operator= (const [PlanetMessages](#) &)

Friends

- class [InputProcessor](#)
- void [init_attrjeod__PlanetMessages](#) ()

8.9.1 Detailed Description

Specifies the message IDs used in the planet model.

Definition at line 49 of file planet_messages.hh.

8.9.2 Constructor & Destructor Documentation

8.9.2.1 `jeod::PlanetMessages::PlanetMessages (void)` `[private]`

8.9.2.2 `jeod::PlanetMessages::PlanetMessages (const PlanetMessages &)` `[private]`

8.9.3 Member Function Documentation

8.9.3.1 `PlanetMessages& jeod::PlanetMessages::operator= (const PlanetMessages &)` `[private]`

8.9.4 Friends And Related Function Documentation

8.9.4.1 `void init_attrjeod__PlanetMessages ()` `[friend]`

8.9.4.2 `friend class InputProcessor` `[friend]`

Definition at line 51 of file `planet_messages.hh`.

8.9.5 Field Documentation

8.9.5.1 `char const * jeod::PlanetMessages::domain_error = "environment/planet/" "domain_error"` `[static]`

Issued when some value is invalid.

`trick_units(-)`

Definition at line 69 of file `planet_messages.hh`.

Referenced by `jeod::Planet::initialize()`.

8.9.5.2 `char const * jeod::PlanetMessages::name_error = "environment/planet/" "name_error"` `[static]`

Issued when the name is invalid.

`trick_units(-)`

Definition at line 59 of file `planet_messages.hh`.

Referenced by `jeod::Planet::initialize()`, `jeod::Planet::register_model()`, and `jeod::BasePlanet::register_planet()`.

8.9.5.3 `char const * jeod::PlanetMessages::registration_error = "environment/planet/" "registration_error"` `[static]`

Issued when the model has not been properly registered/initialized.

`trick_units(-)`

Definition at line 64 of file `planet_messages.hh`.

Referenced by `jeod::Planet::initialize()`.

The documentation for this class was generated from the following files:

- [planet_messages.hh](#)
- [planet_messages.cc](#)

Chapter 9

File Documentation

9.1 `base_planet.cc` File Reference

Planet modeling class methods.

```
#include <cstring>
#include <cstdint>
#include "environment/ephemerides/ephem_manager/include/base_ephem_manager.-
hh"
#include "utils/math/include/vector3.hh"
#include "utils/memory/include/jeod_alloc.hh"
#include "utils/message/include/message_handler.hh"
#include "../include/base_planet.hh"
#include "../include/planet_messages.hh"
```

Namespaces

- [jeod](#)

Namespace jeod.

9.1.1 Detailed Description

Planet modeling class methods.

Definition in file [base_planet.cc](#).

9.2 `base_planet.hh` File Reference

Define the class BasePlanet.

```
#include "environment/ephemerides/ephem_interface/include/ephem_ref_frame.-
hh"
#include "environment/gravity/include/gravity_source.hh"
#include "utils/sim_interface/include/jeod_class.hh"
#include <string>
#include <utility>
```

Data Structures

- class [jeod::BasePlanet](#)

A *BasePlanet* contains the base data needed to model a planet in JEOD.

Namespaces

- [jeod](#)

Namespace *jeod*.

9.2.1 Detailed Description

Define the class BasePlanet.

Definition in file [base_planet.hh](#).

9.3 class_declarations.hh File Reference

Forward declaration of classes defined in the planet model.

Namespaces

- [jeod](#)

Namespace *jeod*.

9.3.1 Detailed Description

Forward declaration of classes defined in the planet model.

Definition in file [class_declarations.hh](#).

9.4 earth.cc File Reference

```
#include "environment/planet/include/base_planet.hh"
#include "environment/planet/include/planet.hh"
#include "utils/named_item/include/named_item.hh"
#include "../include/earth.hh"
```

Namespaces

- [jeod](#)

Namespace *jeod*.

Macros

- #define [JEOD_FRIEND_CLASS](#) Planet_earth_default_data

9.4.1 Macro Definition Documentation

9.4.1.1 #define JEOD_FRIEND_CLASS Planet_earth_default_data

Definition at line 20 of file earth.cc.

9.5 earth.hh File Reference

```
#include "planet_default_data.hh"
```

Data Structures

- class [jeod::Planet_earth_default_data](#)

Namespaces

- [jeod](#)
Namespace jeod.

9.6 jupiter.cc File Reference

```
#include "environment/planet/include/base_planet.hh"  
#include "environment/planet/include/planet.hh"  
#include "utils/named_item/include/named_item.hh"  
#include "../include/jupiter.hh"
```

Namespaces

- [jeod](#)
Namespace jeod.

Macros

- #define [JEOD_FRIEND_CLASS Planet_jupiter_default_data](#)

9.6.1 Macro Definition Documentation

9.6.1.1 #define JEOD_FRIEND_CLASS Planet_jupiter_default_data

Definition at line 20 of file jupiter.cc.

9.7 jupiter.hh File Reference

```
#include "planet_default_data.hh"
```

Data Structures

- class [jeod::Planet_jupiter_default_data](#)

Namespaces

- [jeod](#)
Namespace jeod.

9.8 mars.cc File Reference

```
#include "environment/planet/include/base_planet.hh"  
#include "environment/planet/include/planet.hh"  
#include "utils/named_item/include/named_item.hh"  
#include "../include/mars.hh"
```

Namespaces

- [jeod](#)
Namespace jeod.

Macros

- #define [JEOD_FRIEND_CLASS Planet_mars_default_data](#)

9.8.1 Macro Definition Documentation

9.8.1.1 #define JEOD_FRIEND_CLASS Planet_mars_default_data

Definition at line 20 of file mars.cc.

9.9 mars.hh File Reference

```
#include "planet_default_data.hh"
```

Data Structures

- class [jeod::Planet_mars_default_data](#)

Namespaces

- [jeod](#)
Namespace jeod.

9.10 moon.cc File Reference

```
#include "environment/planet/include/base_planet.hh"
#include "environment/planet/include/planet.hh"
#include "utils/named_item/include/named_item.hh"
#include "../include/moon.hh"
```

Namespaces

- [jeod](#)
Namespace jeod.

Macros

- `#define` [JEOD_FRIEND_CLASS](#) Planet_moon_default_data

9.10.1 Macro Definition Documentation

9.10.1.1 `#define JEOD_FRIEND_CLASS Planet_moon_default_data`

Definition at line 20 of file moon.cc.

9.11 moon.hh File Reference

```
#include "planet_default_data.hh"
```

Data Structures

- class [jeod::Planet_moon_default_data](#)

Namespaces

- [jeod](#)
Namespace jeod.

9.12 planet.cc File Reference

Planet modeling class methods.

```
#include <cmath>
#include <cstring>
#include <cstdlib>
#include "dynamics/dyn_manager/include/base_dyn_manager.hh"
#include "utils/message/include/message_handler.hh"
#include "../include/planet.hh"
#include "../include/planet_messages.hh"
```

Namespaces

- [jeod](#)

Namespace jeod.

9.12.1 Detailed Description

Planet modeling class methods.

Definition in file [planet.cc](#).

9.13 planet.hh File Reference

Planetary modeling constant parameter definitions.

```
#include "utils/sim_interface/include/jeod_class.hh"
#include "base_planet.hh"
#include "environment/gravity/include/gravity_source.hh"
```

Data Structures

- class [jeod::Planet](#)

Describes a planet with mass and shape.

Namespaces

- [jeod](#)

Namespace jeod.

9.13.1 Detailed Description

Planetary modeling constant parameter definitions.

Definition in file [planet.hh](#).

9.14 planet_default_data.hh File Reference

Data Structures

- class [jeod::Planet_default_data](#)

Namespaces

- [jeod](#)

Namespace jeod.

9.15 planet_messages.cc File Reference

Implement the class PlanetMessages.

```
#include "../include/planet_messages.hh"
```

Namespaces

- [jeod](#)
Namespace jeod.

Macros

- #define [PATH](#) "environment/planet/"

9.15.1 Detailed Description

Implement the class PlanetMessages.

Definition in file [planet_messages.cc](#).

9.16 planet_messages.hh File Reference

Define the class PlanetMessages, the class that specifies the message IDs used in the planet model.

```
#include "utils/sim_interface/include/jeod_class.hh"
```

Data Structures

- class [jeod::PlanetMessages](#)
Specifies the message IDs used in the planet model.

Namespaces

- [jeod](#)
Namespace jeod.

9.16.1 Detailed Description

Define the class PlanetMessages, the class that specifies the message IDs used in the planet model.

Definition in file [planet_messages.hh](#).

9.17 sun.cc File Reference

```
#include "environment/planet/include/base_planet.hh"
#include "environment/planet/include/planet.hh"
#include "utils/named_item/include/named_item.hh"
#include "../include/sun.hh"
```

Namespaces

- [jeod](#)
Namespace jeod.

Macros

- `#define` [JEOD_FRIEND_CLASS Planet_sun_default_data](#)

9.17.1 Macro Definition Documentation

9.17.1.1 `#define JEOD_FRIEND_CLASS Planet_sun_default_data`

Definition at line 22 of file sun.cc.

9.18 sun.hh File Reference

```
#include "planet_default_data.hh"
```

Data Structures

- class [jeod::Planet_sun_default_data](#)

Namespaces

- [jeod](#)
Namespace jeod.

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