ohCaptain

Generated by Doxygen 1.8.11

Contents

Chapter 1

Namespace Index

1.1 Namespace List

Here is a list of all namespaces with brief descriptions:

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 3

Class Index

3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 4

File Index

4.1 File List

Here is a list of all files with brief descriptions:

Chapter 5

Namespace Documentation

5.1 oCpt Namespace Reference

Classes

- class CoveragePathTask

    An object representing a coverage path task.
- class DredgeTask

    An Object representing a dredging task.
- class FollowTask

    An object representing a follow the target task.
- class iTask

    Task interface, all tasks need to adhere to this structure.
- class LogTask

    An Object representing a data logging task.
- class PathTask

    An object representing a normal A to B type of path planning.
- class RouteTask
- class Task
- class WorkTask

Chapter 6

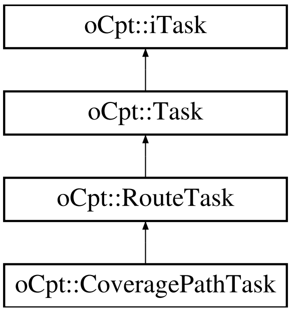
Class Documentation

6.1 oCpt::CoveragePathTask Class Reference

An object representing a coverage path task.

```
#include <Task.h>
```

Inheritance diagram for oCpt::CoveragePathTask:



Public Member Functions

- CoveragePathTask ()
- virtual ∼CoveragePathTask ()

Additional Inherited Members

6.1.1 Detailed Description

An object representing a coverage path task.

All these types of tasks need a robot to cover a complete region in order to perform their tasks. According to {cao_region_1988} such a mobile robot should use the following criteria, for a region filling operation:

1. The mobile robot must move through an entire area, i.e., the overall travel must cover a whole region.
2. The mobile robot must fill the region without overlapping paths.
3. Continuous and sequential operations without any repetition of paths is required of the robot.
4. The robot must avoid all obstacles in a region.
5. Simple motion trajectories (e.g., straight lines or circles) should be used for simplicity in control.
6. An "optimal" path is desired under the available conditions. It is not always possible to satisfy all these criteria for a complex environment. Sometimes a priority consideration is required.

6.1.2 Constructor & Destructor Documentation

6.1.2.1 oCpt::CoveragePathTask::CoveragePathTask ( )

Constructor of the interface

Returns

6.1.2.2 oCpt::CoveragePathTask::∼CoveragePathTask ( ) [virtual]

The deconstructor

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

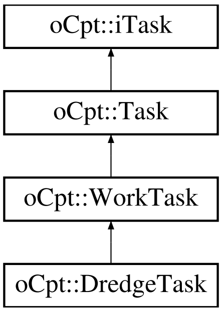
- include/Task.h
- src/Task.cpp

6.2 oCpt::DredgeTask Class Reference

An Object representing a dredging task.

`#include <Task.h>`

Inheritance diagram for oCpt::DredgeTask:



Public Member Functions

- DredgeTask ()
- virtual ∼DredgeTask ()

Additional Inherited Members

6.2.1 Detailed Description

An Object representing a dredging task.

All these types tasks make use of an actuator and sensors to perform dredging tasks

6.2.2 Constructor & Destructor Documentation

6.2.2.1 oCpt::DredgeTask::DredgeTask ( )

Constructor of the interface

Returns

6.2.2.2 oCpt::DredgeTask::∼DredgeTask ( ) [virtual]

The deconstructor

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

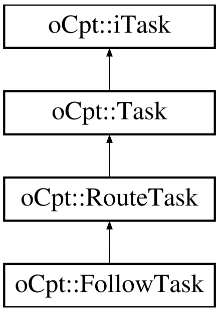
- include/Task.h
- src/Task.cpp

6.3 oCpt::FollowTask Class Reference

An object representing a follow the target task.

```
#include <Task.h>
```

Inheritance diagram for oCpt::FollowTask:



Public Member Functions

- FollowTask ()
- virtual ∼FollowTask ()

Additional Inherited Members

6.3.1 Detailed Description

An object representing a follow the target task.

All these types of tasks need to follow a (moving) target

6.3.2 Constructor & Destructor Documentation

6.3.2.1 oCpt::FollowTask::FollowTask ( )

Constructor of the interface

Returns

6.3.2.2 oCpt::FollowTask::∼FollowTask ( ) [virtual]

The deconstructor

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

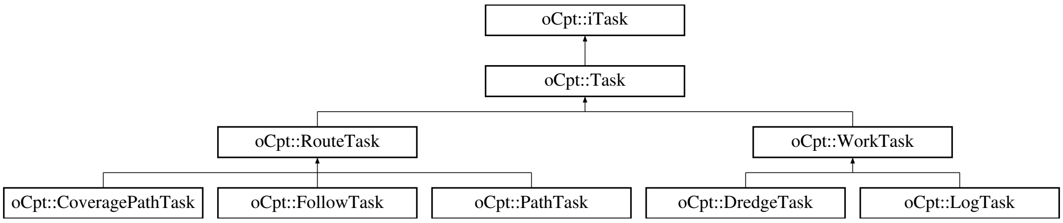
- include/Task.h
- src/Task.cpp

6.4 oCpt::iTask Class Reference

Task interface, all tasks need to adhere to this structure.

`#include <Task.h>`

Inheritance diagram for oCpt::iTask:



Classes

- class Status

Public Types

- enum TypeOf { Route = 1, Work = 2 }
- typedef boost::shared_ptr< iTask > ptr

  Boost shared_ptr to a task.

Public Member Functions

- iTask ()
- virtual ∼iTask ()
- virtual void start ()=0
- virtual iTask::Status::ptr status ()=0
- virtual void stop ()=0

6.4.1 Detailed Description

Task interface, all tasks need to adhere to this structure.

This interface make sure that all task adheres to the same runtime rules and enable run-time polymorphism

6.4.2 Member Typedef Documentation

6.4.2.1 typedef boost::shared_ptr<iTask> oCpt::iTask::ptr

Boost shared_ptr to a task.

6.4.3 Member Enumeration Documentation

6.4.3.1 enum oCpt::iTask::TypeOf

Enumeration indicating which type of task the object is

Enumerator

Route

Work

6.4.4 Constructor & Destructor Documentation

6.4.4.1 oCpt::iTask::iTask ( )

Constructor of the interface

Returns

6.4.4.2 oCpt::iTask::∼iTask ( ) [virtual]

Deconstructor of the interface

6.4.5 Member Function Documentation

6.4.5.1 virtual void oCpt::iTask::start ( ) [pure virtual]

The start command for a task

Implemented in oCpt::Task.

6.4.5.2 virtual iTask::Status::ptr oCpt::iTask::status ( ) [pure virtual]

Retrieves the Status of a task

Returns

Boost shared_ptr of the task status

Implemented in oCpt::Task.

6.4.5.3 virtual void oCpt::iTask::stop ( ) [pure virtual]

The stop command for a task

Implemented in oCpt::Task.

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

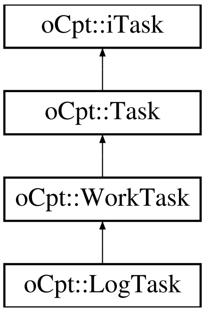
- include/Task.h
- src/Task.cpp

6.5 oCpt::LogTask Class Reference

An Object representing a data logging task.

```
#include <Task.h>
```

Inheritance diagram for oCpt::LogTask:



Public Member Functions

- LogTask ()
- virtual ∼LogTask ()

Additional Inherited Members

6.5.1 Detailed Description

An Object representing a data logging task.

All these types of tasks make use of a sensor to record and log

6.5.2 Constructor & Destructor Documentation

6.5.2.1 oCpt::LogTask::LogTask ( )

Constructor of the interface

Returns

6.5.2.2 oCpt::LogTask::∼LogTask ( ) [virtual]

The deconstructor

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

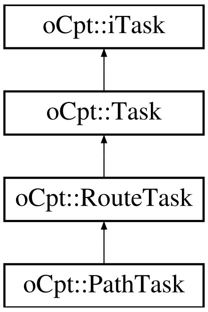
- include/Task.h
- src/Task.cpp

6.6 oCpt::PathTask Class Reference

An object representing a normal A to B type of path planning.

```
#include <Task.h>
```

Inheritance diagram for oCpt::PathTask:



Public Member Functions

- PathTask ()
- virtual ∼PathTask ()

Additional Inherited Members

6.6.1 Detailed Description

An object representing a normal A to B type of path planning.

All these types of tasks need to plann an optimum route between A and B, either in time, energy consumption or

6.6.2 Constructor & Destructor Documentation

6.6.2.1 oCpt::PathTask::PathTask ( )

Constructor of the interface

Returns

6.6.2.2 oCpt::PathTask::∼PathTask ( ) [virtual]

The deconstructor

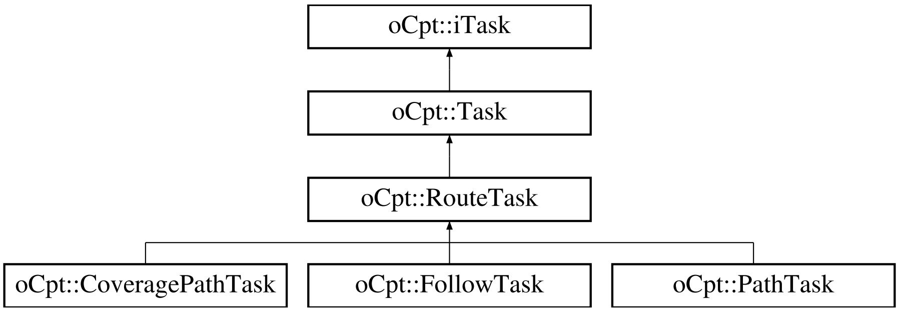
The documentation for this class was generated from the following files:

- include/Task.h
- src/Task.cpp

6.7 oCpt::RouteTask Class Reference

```
#include <Task.h>
```

Inheritance diagram for oCpt::RouteTask:



Public Member Functions

- RouteTask ()
- virtual ∼RouteTask ()

Additional Inherited Members

6.7.1 Detailed Description

An object repsressenting route related tasks

6.7.2 Constructor & Destructor Documentation

6.7.2.1 oCpt::RouteTask::RouteTask ( )

Constructor of the interface

Returns

6.7.2.2 oCpt::RouteTask::∼RouteTask ( ) [virtual]

The deconstructor

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

- include/Task.h
- src/Task.cpp

6.8 oCpt::iTask::Status Class Reference

```
#include <Task.h>
```

Public Types

- typedef boost::shared_ptr< iTask::Status > ptr

  Boost shared_ptr to the task status.

Public Member Functions

- Status ()
- virtual ∼Status ()
- double progress ()
- bool running ()
- bool successful ()

6.8.1 Member Typedef Documentation

6.8.1.1 typedef boost::shared_ptr<iTask::Status> oCpt::iTask::Status::ptr

Boost shared_ptr to the task status.

6.8.2 Constructor & Destructor Documentation

6.8.2.1 oCpt::iTask::Status::Status ( )

Constructor of the iTask

Returns

6.8.2.2 oCpt::iTask::Status::∼Status ( ) [virtual]

Deconstructor

6.8.3 Member Function Documentation

6.8.3.1 double oCpt::iTask::Status::progress ( )

Show the progress of the task

Returns

double between 0..1

6.8.3.2 bool oCpt::iTask::Status::running ( )

Returns the running state of the task

Returns

bool where running is true

6.8.3.3 bool oCpt::iTask::Status::successful ( )

Returns if the task was completed succesfully

Returns

bool where a succesfully completed task is true, task in progress or failed are false

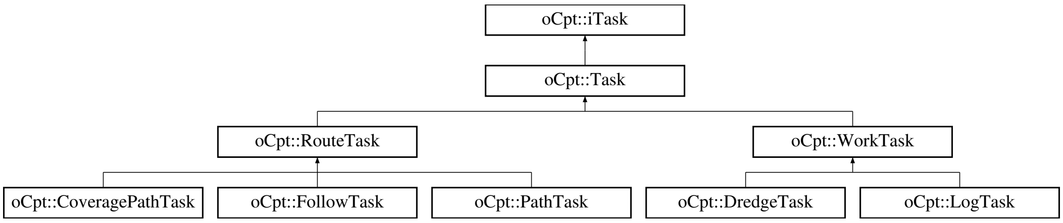
The documentation for this class was generated from the following files:

- include/Task.h
- src/Task.cpp

6.9 oCpt::Task Class Reference

```
#include <Task.h>
```

Inheritance diagram for oCpt::Task:



Public Member Functions

- Task ()
- virtual ∼Task ()
- virtual void start ()
- virtual iTask::Status::ptr status ()
- virtual void stop ()

Protected Attributes

- iTask::Status::ptr _status

  a boost share_ptr to the status of a task
- TypeOf _typeof

  Indicating the type of a task.

Additional Inherited Members

6.9.1 Detailed Description

The Base Task class

6.9.2 Constructor & Destructor Documentation

6.9.2.1 oCpt::Task::Task ( )

The contructor

Returns

6.9.2.2 oCpt::Task::∼Task ( ) [virtual]

The deconstructor

6.9.3 Member Function Documentation

6.9.3.1 void oCpt::Task::start ( ) [virtual]

The start command for a task

Implements oCpt::iTask.

6.9.3.2 iTask::Status::ptr oCpt::Task::status ( ) [virtual]

Retrieves the Status of a task

Returns

Boost shared_ptr of the task status

Implements oCpt::iTask.

6.9.3.3 void oCpt::Task::stop ( ) [virtual]

The stop command for a task

Implements oCpt::iTask.

6.9.4 Member Data Documentation

6.9.4.1 iTask::Status::ptr oCpt::Task::_status [protected]

a boost share_ptr to the status of a task

6.9.4.2 TypeOf oCpt::Task::_typeof [protected]

Indicating the type of a task.

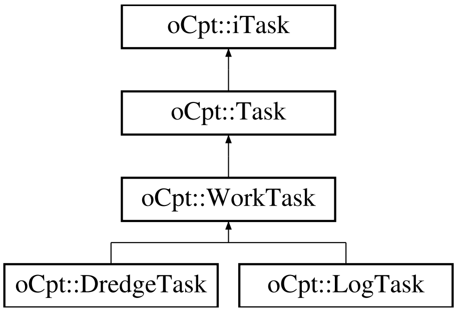
The documentation for this class was generated from the following files:

- include/Task.h
- src/Task.cpp

6.10 oCpt::WorkTask Class Reference

```
#include <Task.h>
```

Inheritance diagram for oCpt::WorkTask:



Public Member Functions

- WorkTask ()
- virtual ∼WorkTask ()

Additional Inherited Members

6.10.1 Detailed Description

An object representing work related tasks

6.10.2 Constructor & Destructor Documentation

6.10.2.1 oCpt::WorkTask::WorkTask ( )

Constructor of the interface

Returns

6.10.2.2 oCpt::WorkTask::∼WorkTask ( ) [virtual]

The deconstructor

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

- include/Task.h
- src/Task.cpp

Chapter 7

File Documentation

7.1 include/Task.h File Reference

```
#include <boost/shared_ptr.hpp>
```

Classes

- class oCpt::iTask

  Task interface, all tasks need to adhere to this structure.
- class oCpt::iTask::Status
- class oCpt::Task
- class oCpt::RouteTask
- class oCpt::WorkTask
- class oCpt::CoveragePathTask

  An object representing a coverage path task.
- class oCpt::FollowTask

  An object representing a follow the target task.
- class oCpt::PathTask

  An object representing a normal A to B type of path planning.
- class oCpt::LogTask

  An Object representing a data logging task.
- class oCpt::DredgeTask

  An Object representing a dredging task.

Namespaces

- oCpt

7.2 src/Task.cpp File Reference

```
#include "../include/Task.h"
```

Namespaces

- oCpt