RoboWar Reference Guide

Generated by Doxygen 1.8.13

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  Base interface.
- class Cell
  Cell interface.
- class Coord
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- class Message
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Enumerations

- enum Direction {
  DIR_NONE = 0, DIR_NORTH_EAST, DIR_EAST, DIR_SOUTH_EAST,
  DIR_SOUTH_WEST, DIR_WEST, DIR_NORTH_WEST }
  Direction of movement.

4.1.1 Detailed Description

RoboWar namespace.

4.1.2 Enumeration Type Documentation

4.1.2.1 Direction

`enum robowar::Direction`

Direction of movement.

Direction of movement from a (pointy topped) hex cell.

Enumerator

DIR_NONE	No movement.
DIR_NORTH_EAST	North-east.
DIR_EAST	East.
DIR_SOUTH_EAST	South-east.
DIR_SOUTH_WEST	South-west.
DIR_WEST	West.
DIR_NORTH_WEST	North-west.

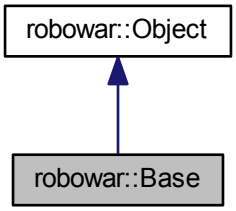
Chapter 5

Class Documentation

5.1 robowar::Base Class Reference

Base interface.

Inheritance diagram for robowar::Base:



Public Member Functions

- virtual bool isActive () const =0

  Check if the base is active, i.e. produce robots.
- virtual int getConstructionCooldown () const =0
- virtual int getMaxConstructionCooldown () const =0

  Get maximum robot construction cooldown of the base.

5.1.1 Detailed Description

Base interface.

Interface for interaction with a robot base.

5.1.2 Member Function Documentation

5.1.2.1 getConstructionCooldown()

```
virtual int robowar::Base::getConstructionCooldown ( ) const  [pure virtual]
```

Get current robot construction cooldown of the base. Zero cooldown means that the base can produce a robot.

5.2 robowar::Cell Class Reference

Cell interface.

Public Member Functions

- virtual Coord getCoord () const =0
  Get coordinate of the cell.
- virtual bool isEmpty () const =0
  Check if the cell is empty (has no object on it).
- virtual bool isRobotHere () const =0
  Check if there is a robot on the cell.
- virtual bool isBaseHere () const =0
  Check if there is a base on the cell.
- virtual Robot * getRobot () const =0
- virtual Base * getBase () const =0

5.2.1 Detailed Description

Cell interface.

Interface for a (hexagonal) cell on a game map.

5.2.2 Member Function Documentation

5.2.2.1 getBase()

```
virtual Base* robowar::Cell::getBase ( ) const  [pure virtual]
```

Get base on the cell.

Returns

base or null if there is no base.

5.2.2.2 getRobot()

```
virtual Robot* robowar::Cell::getRobot ( ) const  [pure virtual]
```

Get robot on the cell.

Returns

robot or null if there is no robot.

5.3 robowar::Coord Class Reference

Coord class.

Public Member Functions

- Coord ()
  Default constructor (components are set to zeroes).
- Coord (int col, int row)
  Constructor.
- int getCol () const
  Get column (x).
- int getRow () const
  Get row (y).
- int getX () const
  Get x (column).
- int getY () const
  Get y (row).
- Coord plus (const Coord &coord) const
  Get sum of this coord and given coord.
- Coord atDirection (const Direction &dir) const
  Get neighbor coord obtained by moving from this coord in given direction.
- int distanceTo (const Coord &dest) const
  Get distance from this coord to given coord.
- Direction directionTo (const Coord &dest) const
  Get approximate direction from this coord to given coord.

5.3.1 Detailed Description

Coord class.

Represents coordinate of a hex cell on a game map as (column, row) or (x, y).

5.4 robowar::Message Class Reference

Message interface.

Public Member Functions

- virtual int getSize () const =0
- virtual void write (int index, int value)=0

  Write integer value by given index.
- virtual int read (int index) const =0
- virtual void clear ()=0

  Init message by zeroes.
- virtual void copy (Message *msg)=0

  Copy given message.

5.4.1 Detailed Description

Message interface.

Interface for a message in robot interactions.

5.4.2 Member Function Documentation

5.4.2.1 getSize()

```
virtual int robowar::Message::getSize ( ) const  [pure virtual]
```

Get message size.

Returns

message size in integers.

5.4.2.2 read()

```
virtual int robowar::Message::read (
            int index ) const  [pure virtual]
```

Read integer value by given index.

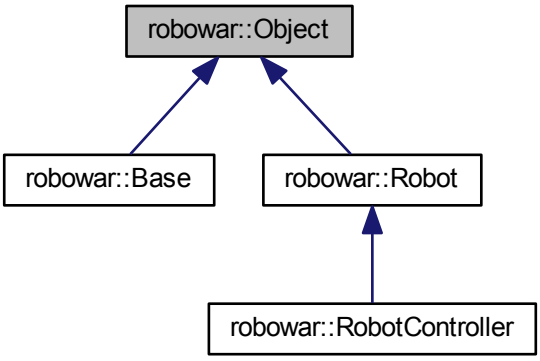
Returns

value or zero if index is out of range.

5.5 robowar::Object Class Reference

Object interface.

Inheritance diagram for robowar::Object:



Public Member Functions

- virtual Coord getCoord () const =0
  Get coordinate of the object.
- virtual int getTeamId () const =0
- virtual bool isEnemy () const =0
  Check if the object is an enemy (belongs to another team).
- virtual bool isNeutral () const =0
  Check if the object is neutral (has no team).
- virtual int getDistanceTo () const =0
  Get distance to the object.
- virtual bool isInViewRange () const =0
  Check if the object is in view range.
- virtual bool isInShootRange () const =0
  Check if the object is in shoot range.
- virtual bool isInTransmitRange () const =0
  Check if the object is in transmit range.
- virtual int getHitpoints () const =0
  Get current hitpoints of the object.
- virtual int getMaxHitpoints () const =0
  Get maximum hitpoints of the object.

5.5.1 Detailed Description

Object interface.

Interface for a general map object (robot, base, etc.).

5.5.2 Member Function Documentation

5.5.2.1 getTeamId()

```
virtual int robowar::Object::getTeamId ( ) const  [pure virtual]
```

Get id of the object's team.

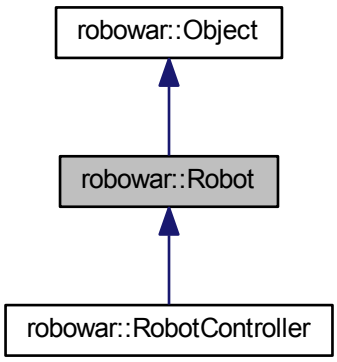
Returns

team's id or -1 if object has no team.

5.6 robowar::Robot Class Reference

Robot interface.

Inheritance diagram for robowar::Robot:



Public Member Functions

- virtual int getWeaponCooldown () const =0
- virtual int getMaxWeaponCooldown () const =0

  Get maximum weapon cooldown of the robot.
- virtual int getViewDistance () const =0

  Get view range of the robot.
- virtual int getShootDistance () const =0

  Get shoot range of the robot.
- virtual int getTransmitDistance () const =0

  Get transmit range of the robot.
- virtual bool canShoot () const =0

  Check if the robot can shoot now.

5.6.1 Detailed Description

Robot interface.

Interface for interaction with a robot.

5.6.2 Member Function Documentation

5.6.2.1 getWeaponCooldown()

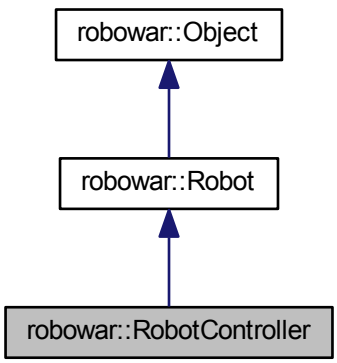
```
virtual int robowar::Robot::getWeaponCooldown ( ) const  [pure virtual]
```

Get current weapon cooldown of the robot. Zero cooldown means that the robot can shoot.

5.7 robowar::RobotController Class Reference

Robot controller interface.

Inheritance diagram for robowar::RobotController:



Public Member Functions

- virtual int getNumOfRobotsInView () const =0

  Get number of other robots in this robot's view range.
- virtual int getNumOfBasesInView () const =0

  Get number of bases in this robot's view range.
- virtual Robot * getRobotInView (int index) const =0
- virtual Base * getBaseInView (int index) const =0
- virtual int getNumOfMessages () const =0

  Get number of incoming messages.
- virtual Message * getMessage (int index) const =0
- virtual Message * getOwnMessage () const =0

  Get own message.
- virtual Message * getMemory () const =0

  Get own memory.
- virtual bool isShooting () const =0

  Check if robot will attempt to shoot.
- virtual bool isMoving () const =0

  Check if robot will attempt to move.
- virtual bool isTransmitting () const =0

  Check if robot will attempt to transmit.
- virtual bool canMoveAt (int direction) const =0
- virtual bool canShootAt (const Coord &coord) const =0
- virtual void moveAt (int direction)=0
- virtual void moveTo (const Coord &coord)=0
- virtual void shootAt (const Coord &coord)=0
- virtual void transmit ()=0
- virtual void cancelMove ()=0

  Cancel move attempt.
- virtual void cancelShoot ()=0

  Cancel ahoot attempt.
- virtual void cancelTransmit ()=0

  Cancel transmit attempt.
- virtual bool cellExists (const Coord &coord) const =0
- virtual Cell * getCell (const Coord &coord)=0

5.7.1 Detailed Description

Robot controller interface.

Interface to control a robot in a robot script.

5.7.2 Member Function Documentation

5.7.2.1 canMoveAt()

```
virtual bool robowar::RobotController::canMoveAt (
            int direction ) const  [pure virtual]
```

Check if robot can move to neighbor cell in given direction.

Returns

true if movement is possible, false otherwise. Movement cannot be made if there is no cell in given direction or the cell is occupied by a base. If there is a robot on the neighbor cell, movement is possible, assuming that the robot will free the cell.

5.7.2.2 canShootAt()

```
virtual bool robowar::RobotController::canShootAt (
            const Coord & coord ) const  [pure virtual]
```

Check if robot can shoot at the cell with the given coord.

Returns

true if shooting is possible, false otherwise. Shooting cannot be made if there is no cell with given coordinate.

5.7.2.3 cellExists()

```
virtual bool robowar::RobotController::cellExists (
            const Coord & coord ) const  [pure virtual]
```

Check if cell with given coordinate exists.

Returns

true if cell is in view range and exists, false otherwise. Only cells in this robot's view range can be checked for existence.

5.7.2.4 getBaseInView()

```
virtual Base* robowar::RobotController::getBaseInView (
            int index ) const  [pure virtual]
```

Get base in view by given index.

Returns

base or null if index is out of range.

5.7.2.5 getCell()

```
virtual Cell* robowar::RobotController::getCell (
            const Coord & coord )  [pure virtual]
```

Get cell in view range.

Returns

cell or null if cell doesn't exist or out of view range.

5.7.2.6 getMessage()

```
virtual Message* robowar::RobotController::getMessage (
            int index ) const  [pure virtual]
```

Get incoming message by index.

Returns

message of null if index is out of range.

5.7.2.7 getRobotInView()

```
virtual Robot* robowar::RobotController::getRobotInView (
            int index ) const  [pure virtual]
```

Get robot in view by given index.

Returns

robot or null if index is out of range.

5.7.2.8 moveAt()

```
virtual void robowar::RobotController::moveAt (
            int direction )  [pure virtual]
```

Attempt to move in given direction. If movement isn't possible, it will be cancelled.

5.7.2.9 moveTo()

```
virtual void robowar::RobotController::moveTo (
            const Coord & coord )  [pure virtual]
```

Attempt to move in direction to given coordinate. If movement isn't possible, it will be cancelled.

5.7.2.10 shootAt()

```
virtual void robowar::RobotController::shootAt (
            const Coord & coord )  [pure virtual]
```

Attempt to shoot at the cell with given coordinate. If shooting isn't possible, it will be cancelled.

5.7.2.11 transmit()

```
virtual void robowar::RobotController::transmit ( )  [pure virtual]
```

Start transmission. The content of own message will be transmitted. Message will be transmitted to ally robots in transmit range and become available to them on the next iteration.

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