DesignProjectMain

EV3LargeRegulatedMotor leftMotor EV3LargeRegulatedMotor rightMotor EV3LargeRegulatedMotor armLiftMotor

EV3UltrasonicSensor usSensor EV3ColorSensor LightSensor EV3ColorSensor LightSensor2 EV3ColorSensor LightSensor3

SampleProvider usDistance SampleProvider sensorVal SampleProvider sensorVal2 SampleProvider sensorVal3

float[] usData float[] sensorValData float[] sensorValData2 float[] sensorValData3

int TRACK int WHEEL_RAD TextLCD lcd

public static void main(String args[])

Odometer

extends OdometerData implements Runnable

OdometerData odoData Odometer odo

EV3LargeRegulatedMotor leftMotor EV3LargeRegulatedMotor rightMotor

int leftMotorTachoCount int rightMotorTachoCount

double TRACK
double WHEEL_RAD
double distanceLeft;
double distanceRight
double leftMotorLastTachoCount;
double rightMotorLastTachoCount
double deltaD
double deltaT
double Theta
double dX
double dY

long ODOMETER_PERIOD

public synchronized static Odometer
getOdometer(EV3LargeRegulatedMotor leftMotor,
EV3LargeRegulatedMotor rightMotor,
final double TRACK, final double WHEEL_RAD)

public synchronized static Odometer getOdometer() throws OdometerExceptions

public void run()

OdometerExceptions extends Exception

OdometerData

double x double y double theta

int numberOfIntances int MAX INSTANCES

Lock lock

boolean isReseting

Condition doneReseting

OdometerData odoData

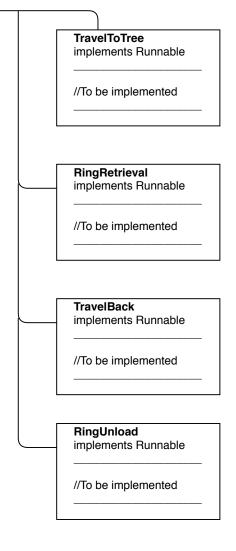
public synchronized static OdometerData getOdometerData() throws OdometerExceptions

public double[] getXYT()
public void update(double x, double y, double theta)
public void setXYT(double x, double y , double theta)

public void setX(double x) public void setY(double y) public void setTheta(double theta)

Localization implements Runnable Odometer odometer SampleProvider usDistance SampleProvider sensorVal SampleProvider sensorVal2 float[] usData float[] sensorValData float[] sensorValData2 int track int wheel rad int ROTATE_SPEED int FORWARD_SPEED int fullRotation int halfRotation int DISTANCE_RANGE int sensorOffset boolean keepGoing double currentCoordinates double angleBeta double currentAngle double finalAngle double initialAngle double firstFallingEdge double secondFallingEdge double previousReading [] public void run() private void usLocalization() private void IsLocalization() void turnTo(double theta) private static int convertDistance(double radius, double distance)

private static int convertAngle(double radius, double width, double angle)



Author: Maxime Cardinal Date: October 29th 2018 Version: 1 Edit:

Maxime Cardinal-October 22nd-Creation of the preminilary diagram