Ackerman PID Controller
UML Class diagram

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Robot

- _trackLength:float
- _wheelBase:float
- _wheelRadius:float
- _turningRadius:float
- _robotHeading:float
- _robotVelocity:float
- _leftWheelAngle:double
- _rightWheelAngle:double
- _leftWheelVelocity:double
- _rightWheelVelocity:double

+ getTrackLength():float
+ getWheelBase():float
+ getWheelRadius():float
+ getTurningRadius():float
+ getRobotHeading():float
+ getRobotVelocity():float
+ getLeftWheelVelocity():double
+ getRightWheelVelocity():double
+ getLeftWheelAngle():double
+ getRightWheelAngle():double
+ setLeftWheelVelocity(double leftWheelVelocity):void
+ setRightWheelVelocity(double rightWheelVelocity):void
+ setLeftWheelAngle(double leftWheelAngle):void
+ setRightWheelAngle(double rightWheelAngle):void

Ackerman

- _targetVelocity:double
- _targetHeading:double

+ setTargetVelocity(double targetVelocity):void
+ setTargetHeading(double targetHeading):void
+ getTargetVelocity():double
+ getTargetHeading():double
+ Calculate():void

PID

- _kp:double
- _ki:double
- _kd:double
- _leftWheelAngleError:double
- _rightWheelAngleError:double
- _leftWheelAngleHeading:double
- _rightWheelAngleHeading:double

+ setkp(double kp):void
+ setki(double ki):void
+ setkd(double kd):void
+ getkp():double
+ getki():double
+ getkd():double
+ CalculateLWAngleFeedback():double
+ CalculateRWAngleFeedback():double
+ CalculateLWHeadingFeedback():double
+ CalculateRWHeadingFeedback():double