Ackermann Steering Controller

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Analysis

- speed_thresh: double
- heading_thresh: double

+ converge(): void

Robot

- wheel_base: double
- wheel_track: double
- wheel_radius: double
- heading: double
- speed: double
- left_wheel_velocity: double
- right_wheel_velocity: double
- left_wheel_angle: double
- right_wheel_angle: double
- com_offset: double
- alpha_wheel_max: double

+ drive(double,double,double): void
+ getSpeed(): double
+ getHeading(): double
+ getAlphaWheelMax(): double

Controller

- max_steering_angle: double
- max_throttle: double
- Kp_theta: double
- Ki_theta: double
- Kd_theta: double
- Kp_s: double
- Ki_s: double
- Kd_s: double
- dt: double
- target_speed: double
- target_heading: double
- speed_error: std::vec<double>
- heading_error: std::vec<double>

+ Controller(Robot&)
+ computeError(double, double): std::tuple<double, double>
+ computeSteering(): double
+ computeThrottle(): double
+ setTargets(double, double): void
+ getDt(): double

UserInterface

- target_speed: double
- target_heading: double

+ getTargetsFromUser(): void
+ getTargetSpeed(): double
+ getTargetHeading(): double

Visualization

+ show(double,double, UserInterface&): void