BaseLocalPlanner Δ move base z::backward

local_planner::BackwardLocalPlanner paramServer_

- backwardsPlanPath

 costmapRos goalMarkerPublisher

- k_rho k_alpha k_betta

pure_spinning_allowed

_betta_error_ - linear_mode_rho_error

threshold

goalReached

initialPureSpinningStage straightBackwardsAndPure SpinningMode enable_obstacle_checking_

 inGoalPureSpinningState_ alpha_offset betta offset

 yaw_goal_tolerance xy_goal_tolerance carrot distance

- carrot angular distance divergenceDetectionLastCarrot LinearDistance

max_linear_x_speed - max_angular_z_speed_- currentCarrotPoseIndex_

 waiting - waitingTimeout

- waitingStamp

+ BackwardLocalPlanner()

+ ~BackwardLocalPlanner() + computeVelocityCommands()

+ isGoalReached() + setPlan() + initialize()

+ initialize() + initialize() reconfigCB()

findInitialCarrotGoal() updateCarrotGoal() resamplePrecisePlan()

straightBackwardsAndPure SpinCmd()

defaultBackwardCmd() - publishGoalMarker()

 computeCurrentEuclideanAnd AngularErrorsToCarrotGoal()

- checkCurrentPoseInGoalRange() resetDivergenceDetection() divergenceDetectionUpdate()

- checkCarrotHalfPlainConstraint() generateTrajectory() computeNewPositions()