Class Diagram

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Final Project Group 7

InspectCan (ROS Service)

Request:
+ rgb_image : sensor_msgs::Image

Response:
+ success : bool
+ nominal : bool
+ centroid_x : int
+ centroid_y : int

LocalizeCan (ROS Service)

Request:
+ point_cloud : sensor_msgs::PointCloud2
+ centroid_x : int
+ centroid_y : int

Response:
+ success : bool
+ transform_CDi : geometry_msgs::Transform

InspectionController (ROS Node)

- nh : ros::NodeHandle
- arm_trajectory_result_sub : ros::Subscriber<control_msgs::FollowJointTrajectoryActionResult>
- move_base_cli : ros::ActionClient<move_base_msgs::MoveBaseAction>
- move_base_result_sub : ros::Subscriber<move_base_msgs::MoveBaseActionResult>
- inspect_can_cli : ros::ServiceClient<enpm808x_final_inspection_robot::InspectCan>
- localize_can_cli : ros::ServiceClient<enpm808x_final_inspection_robot::LocalizeCan>
- point_cloud_sub : ros::Subscriber<sensor_msgs::PointCloud2>
- rgb_image_sub : ros::Subscriber<sensor_msgs::Image>
- home_position : geometry_msgs::Pose
- expected_can_positions : std::vector<tf::Vector3>
- detection_pose_offset : tf::Transform
- last_point_cloud : sensor_msgs::PointCloud2
- last_rgb_image : sensor_msgs::Image

+ InspectionController()
+ ~InspectionController()
+ handleArmTrajectoryResult(const control_msgs::FollowJointTrajectoryActionResultConstPtr&) : void
+ handleMoveBaseResult(const move_base_msgs::MoveBaseActionResultConstPtr&) : void
+ handlePointCloudUpdate(const sensor_msgs::PointCloud2ConstPtr&) : void
+ handleRbgImageUpdate(const sensor_msgs::ImageConstPtr&) : void
- requestMoveBaseActionGoal(const geometry_msgs::Pose&) : void

CanCharacterizer (ROS Node)

- nh : ros::NodeHandle
- inspect_can_srv : ros::ServiceServer<enpm808x_final_inspection_robot::InspectCan>
- localize_can_srv : ros::ServiceServer<enpm808x_final_inspection_robot::LocalizeCan>

+ CanCharacterizer()
+ ~CanCharacterizer()
+ handleInspectCanRequest(enpm808x_final_inspection_robot::InspectCanRequest&, enpm808x_final_inspection_robot::InspectCanResponse&) : bool
+ handleLocalizeCanRequest(enpm808x_final_inspection_robot::LocalizeCanRequest&, enpm808x_final_inspection_robot::LocalizeCanResponse&) : bool