Image pipeline

⇒ image_pipeline fills the gap between getting raw images from a camera driver and higher-level vision processing.

⇒ The image_pipeline stack is designed to process raw camera images into useful inputs to vision algorithms:

⇒ Components include:

1. Calibration:
   - Cameras must be calibrated in order to relate the images they produce to the three-dimensional world.
2. Monocular processing:
   - The raw image stream can be piped through the image_proc node to remove camera distortion.
   - The node also performs color interpolation for Bayer pattern color cameras.
3. Stereo processing:
   - The stereo_image_proc node performs the duties of image_proc for a pair of cameras co-calibrated for stereo vision.
4. Depth processing:
   - depth_image_proc provides nodelets for processing depth images.
5. Visualization:
   - The image_view package provides a lightweight alternative to rviz for viewing an image topic.

★ Hardware Requirement

⇒ The image pipeline will work with any conforming ROS camera driver node.

⇒ The minimal requirements for such a node are:

- Published Topics
  - image_raw (sensor_msgs/Image)
  - camera_info (sensor_msgs/CameraInfo)
- Services
  - set_camera_info (sensor_msgs/SetCameraInfo)