This document describes the sample data for extrinsic parameter calibration between HDL-64ES3 and NovAtel in the Apollo project.

Introduction

Apollo 1.5 provides extrinsic parameter calibration service for Velodyne HDL-64ES3 and NovAtel. This sample data is captured for demonstrating this online service. Together with the calibration manual, this data will help users get familiar with the calibration process.

Features

This sample data is captured by the calibration data recorder which is available in the Apollo repository on GitHub. The data only includes HDL-64ES3 scan data, NovAtel relative motion and INS localization status.

Capturing Devices

The point cloud is captured by HDL-64ES3, while the localization is captured by NovAtel SPAN-CPT. Localization information is processed by the data recorder in order to remove the absolute coordinates.

Format

The sample data is a compressed file including following files:

1. lidar_calib.bag

   A rosbag containing sensor data. Typing

   $rosbag info lidar_calib.bag,

   you will get the following rosbag information:

   version: 2.0
   duration: 3:02s (182s)
   start: Sep 08 2017 12:04:33.03 (1504843473.03)
   end: Sep 08 2017 12:07:35.39 (1504843655.39)
   size: 1.2 GB
   messages: 20405
   compression: none [911/911 chunks]
   types:

pb_msgs/InsStat	[36306149a641468d85afa4cf44de7141]
pb_msgs/RelativeOdometry	[3d7113804ad5e5f12f3588df365d9356]
velodyne_msgs/VelodyneScanUnified	[a02f26cda99b9e0189aac08ed1065a71]

   topics:

   /apollo/calibration/relative_odometry
   18220 msgs
   :pb_msgs/RelativeOdometry
   /apollo/sensor/gnss/ins_stat
   365 msgs
   :pb_msgs/InsStat

/apollo/sensor/velodyne64/VelodyneScanUnified
1820 msgs
:velodyne_msgs/VelodyneScanUnified

2. bag_md5：md5 checksum of lidar_calib.bag, which is used to verify the correctness of the data received at the server.