Implementation of OpenVINS on IntelT265

The launch file containing config data is attached

# IMU Intrinsics

This config file was Generated using [kalibar\_allan](https://github.com/rpng/kalibr_allan) toolbox (Multiplied the output of toolbox by 10x to allow more bias towards visual odometry as [suggested](https://docs.openvins.com/gs-calibration.html) in OpenVINS documentation)

<param name="gyroscope\_noise\_density"      type="double"   value="1.6968e-02" />

<param name="gyroscope\_random\_walk"        type="double"   value="1.9393e-03" />

<param name="accelerometer\_noise\_density"  type="double"   value="1.0000e-1" />

<param name="accelerometer\_random\_walk"    type="double"   value="3.0000e-3" />

# Cam0\_cam1 chain config

This is generated using the [Kalibar toolbox](https://github.com/ethz-asl/kalibr/) cam\_imu calibration tool

<!-- camera intrinsics -->

<rosparam param="cam0\_wh">[848, 800]</rosparam>

<rosparam param="cam1\_wh">[848, 800]</rosparam>

<param name="cam0\_is\_fisheye" type="bool" value="true" />

<param name="cam1\_is\_fisheye" type="bool" value="true" />

<!-- Camera calibration and distortion matrices -->

<rosparam param="cam0\_k">[287.5222548531953, 287.7759196963578, 419.94592910576455, 394.2977562606552]</rosparam>

<rosparam param="cam0\_d">[-0.008152232448426595, 0.06139283207665097, -0.06682430814303411, 0.01756431204855009]</rosparam>

<rosparam param="cam1\_k">[287.2648972756499, 287.5526675605301, 417.53890746140695, 399.1202543659908]</rosparam>

<rosparam param="cam1\_d">[-0.006601389878082893, 0.06285624670204437, -0.06624718433022161, 0.016178100033794867]</rosparam>

        <!-- camera extrinsics -->

        <rosparam param="T\_C0toI">

            [

            -0.99920167,  0.02660989,  0.02979823,  0.00013258,

            -0.02618486, -0.99955102,  0.01456427, -0.00102954,

             0.03017241,  0.01377238,  0.99944982, -0.00098432,

            0.0, 0.0, 0.0, 1.0

            ]

        </rosparam>

        <rosparam param="T\_C1toI">

            [

            -0.99940739,  0.02358804,  0.02506927, -0.06382506,

            -0.02311628, -0.99955327,  0.01894448, -0.00286131,

             0.02550493,  0.01835374,  0.99950620,  0.00096580,

            0.0, 0.0, 0.0, 1.0

            ]

        </rosparam>

# Hardware config done on T265

Enabled the camera stream to ros and set the resolution

<arg name="fisheye\_width"       default="848"/>

  <arg name="fisheye\_height"      default="800"/>

  <arg name="enable\_fisheye1"     default="true"/>

  <arg name="enable\_fisheye2"     default="true"/>

Enabled hardware sync and interpolated the Accelerometer (62 Hz) output between Gyro (200Hz) output frames to unite the gyro and accelerometer output to /imu/data topic

<arg name="enable\_sync"           default="true"/>

  <arg name="linear\_accel\_cov"      default="0.01"/>

  <arg name="initial\_reset"         default="false"/>

  <arg name="unite\_imu\_method"      default="linear\_interpolation"/>