PyVMU Documentation

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CHAPTER 1

Introduction

PyVMU is a Python-based toolkit for interfacing with the Variense VMU931 IMU device.

It supports communication with, and parsing of the VMU931 data streams.

CHAPTER 2

Usage

class pyvmu.vmu931.**VMU931Parser**(*device='/dev/tty.usbmodem1411'*, *accelerometer=False*, *magnetometer=False*, *gyroscope=False*, *euler=False*, *quaternion=False*, *heading=False*)

This class is responsible for communicating with and parsing data from the VMU931 inertial measurement unit.

__init__(*device='/dev/tty.usbmodem1411'*, *accelerometer=False*, *magnetometer=False*, *gyroscope=False*, *euler=False*, *quaternion=False*, *heading=False*)

Opens a connection to the VMU931 device

Parameters

- **device** – Serial device name (on Windows) or path (nix, including OS X).
- **accelerometer** – Enable/disable accelerometer data streaming.
- **magnetometer** – Enable/disable magnetometer data streaming.
- **gyroscope** – Enable/disable gyroscope data streaming.
- **euler** – Enable/disable euler angle data streaming.
- **quaternion** – Enable/disable quaternion data streaming.
- **heading** – Enable/disable compass heading data streaming.

parse(*callback=None*)

Parses a single packet from the VMU931 device, returning a namedtuple. Typically called multiple times from within a loop.

If device status is currently known, we wait for an incoming status packet and parse it. This method will block until status is received (so that we're in a known state). This should never happen outside of the automatic call to parse() made during initialisation.

When a status packet is received, self.device_status is updated to represent the new state.

If a callback method is specified (through the *callback* argument) when calling parse(), that method will be called when the packet is parsed.

Parameters **callback** – Method to call after processing each packet

Returns processed packet

request_status()
Request a new status packet from the VMU931

set_accelerometer(*state*)
Enable/disable streaming of accelerometer data.

Parameters **state** – True/False, desired state

set_accelerometer_resolution(*resolution*)
Sets the accelerometer output resolution of the VMU931 device.

Parameters **resolution** – 2, 4, 8 or 16.

set_euler(*state*)
Enable/disable streaming of euler angle data.

Parameters **state** – True/False, desired state

set_gyroscope(*state*)
Enabled/disable streaming of gyroscope data.

Parameters **state** – True/False, desired state

set_gyroscope_resolution(*resolution*)
Sets the gyroscope output resolution of the VMU931 device.

Parameters **resolution** – 250, 500, 1000 or 2000.

set_heading(*state*)
Enable/disable streaming of compass heading data.

Parameters **state** – True/False, desired state

set_magnetometer(*state*)
Enable/disable streaming of magnetometer data.

Parameters **state** – True/False, desired state

set_quaternion(*state*)
Enable/disable streaming of quaternion data.

Parameters **state** – True/False, desired state

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