SICK TIM310S1 GUIDE

> ⚠ Ubuntu 22.04, Python 3.10.12

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1. Introduction

This code allows you to retrieve measurements obtained from the TIM310S1 LaserScanner. You can customize the acquisition radius (with a limit of 4 meters) and the desired circumference arc chord value. The program will automatically calculate the range of angles needed to acquire data within a 270-degree interval.

2. Prerequisites

Download and install the following packages:

```
sudo python3 -m pip install pyusb
python3 -m pip install pysicktim
```

Allow non-root access:

```
sudo nano /etc/udev/rules.d/sick-tim5xx.rules
```

And write the following line:

```
SUBSYSTEM=="usb", ACTION=="add", ATTR{idVendor}=="19a2",
ATTR{idProduct}=="5001", GROUP="plugdev"
```

Press `CTRL+X`, `Y` and `ENTER` to save and exit. Then:

```
sudo reboot
```

3. Scan.py

Go to `examples>scan.py`

3.1. Settings

In the script you can change the following parameters into desired values:

```
# Set parameters
d_max = 2.0             # Maximum distance to measure in meters
circumference_chord = 1 # Chord length desired of the circumference a d_max
distance
```

3.2. How it works

When you run the script, you will have the distance received from the LaserScanner in the terminal. In particular, will be printed the following sentences:

```
if average<0.0001:
    print("Free space")
elif average<=(d_max/2):
    print(f"WARNING, Nearby obstacle: {average} meters")
else: # Between d_max/2 and d_max
    print(f"Approaching obstacle: {average} meters")
```

It is possible to interrupt the script instanly by pressing `CTRL+C`. When you do it, the script will plot the distances received from the LaserScanner.

4. Telegram.py

Go to `examples>telegram.py`

4.1. How it works

This script allows you to know several functions available within the library pysicktim.