

TLDR DecaWave

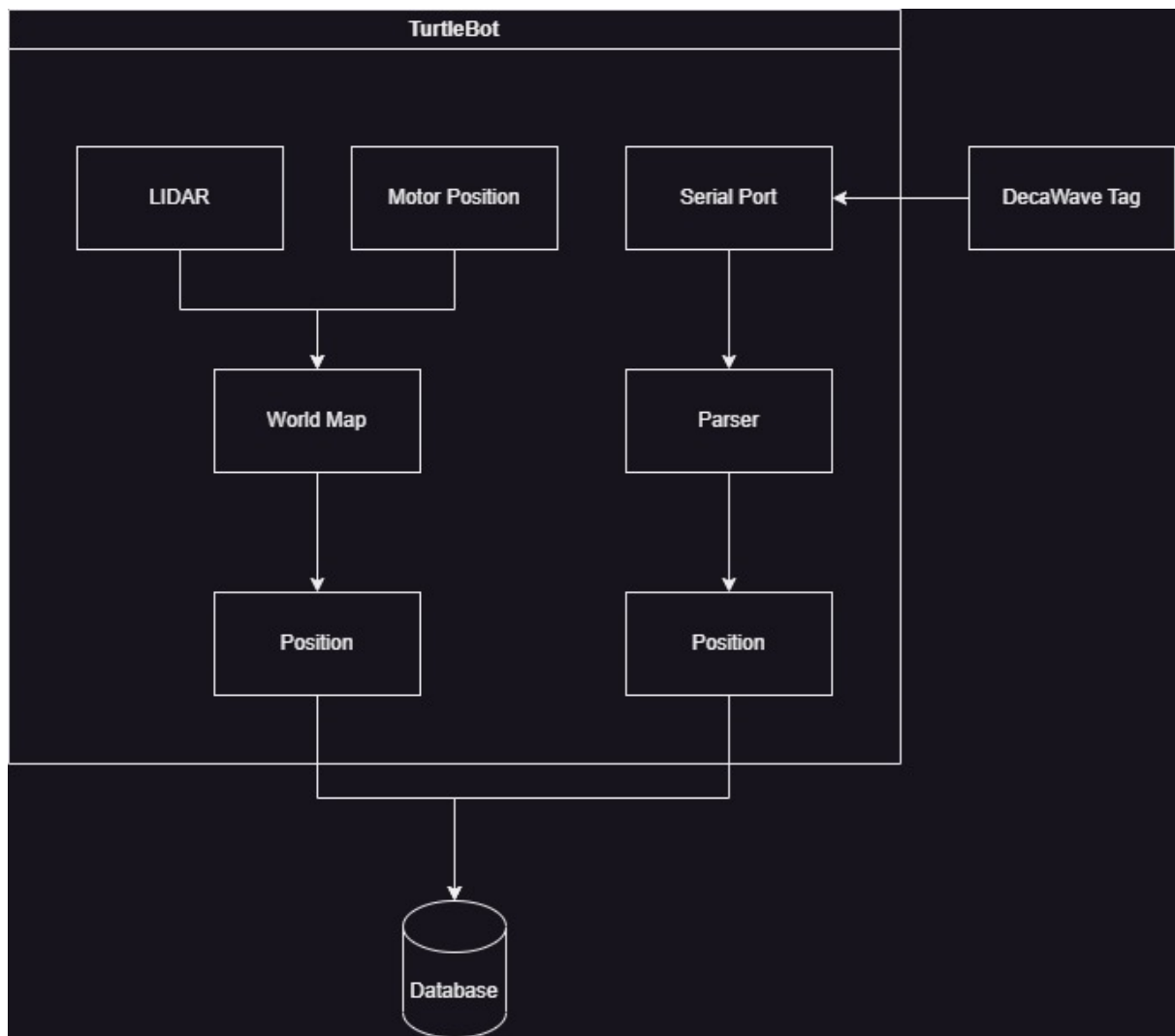
Context

VDL RobotSports want to use the DecaWave beacons for 2 things: to check how accurate the current self-localisation of the robot is. For that they want to compare the position of the DecaWave Tag with the position that the robot itself calculates. Another option is to use the DecaWave positioning with images and odometry data to train the self-localisation of the robot.

I chose to do the first option, because it seemed to me to be more easy to get into.

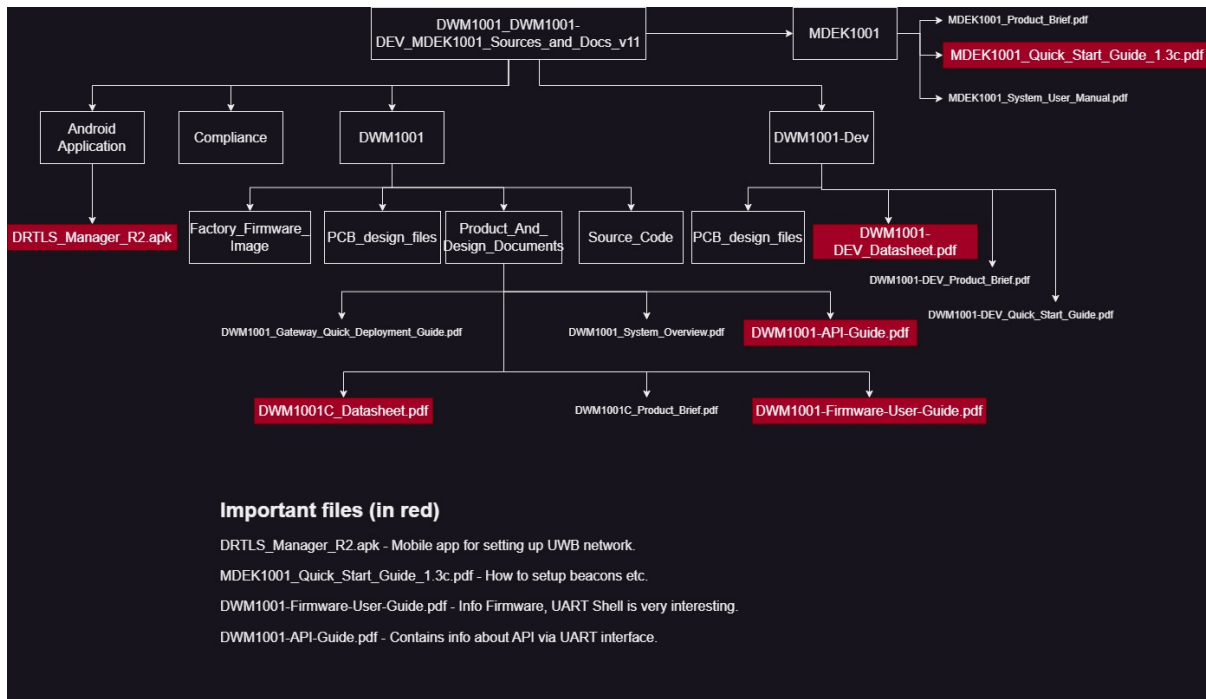
Our Goal

The goal for now is to gather data about the positioning from the TurtleBot itself and compare it with the positioning data from the DecaWave Tag. The data could be saved to a file or database.



Documentation Overview

The documentation of the DecaWave can be found in the Disciplines channel. The root directory is DWM1001_DWM1001-DEV_MDEK1001_Sources_and_Docs_v11.



Quick Start

If you want to know how the DecaWave beacons work and how you can set them up I recommend you read the quick start guide in folder MDEK1001. The guide is called MDEK1001_Quick_Start_Guide_1.3c.pdf.

Important Details

- VDL Robotports self-localisation works with a frequency of 15-20 hz.
- DecaWave localisation can work with a maximum frequency of 10 hz.
- DecaWave localisation might be improved with different firmware.
- It is important to create backup of DecaWave's current firmware.
- VDL has written code for reading out DecaWave tag.