



REAL - TIME VIDEO AIDED NAVIGATION SYSTEM

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SUPERVISOR

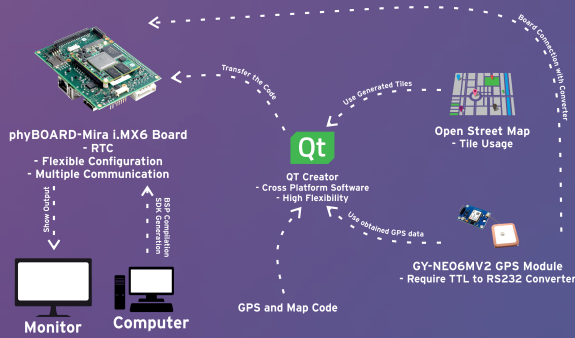
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Project Description

This project aims to construct a system that enables navigation on an offline map which is overlaid on respective real-time video, according to the position gained from an onboard GPS receiver module. The main motivation is to solve the video overlay and the positioning on a map using GPS and compose an integrated solution.

Project Flow Diagram



Project Design Steps

- 1 Prepare the Required Board Environment
TFTP Server, BSP Compilation, SDK Generation
- 2 Prepare the Required QT Environment
Required for Cross Compile
Compiler, Debugger and Kit Configurations
- 3 Get GPS Data and Implement on Code
Successfully Testing Outputs
- 4 Generate Offline Map Tiles
Locate the Position on Generated Map Tile
- 5 Transfer the Code to the Board

TESTING OUTPUT AND RESULTS

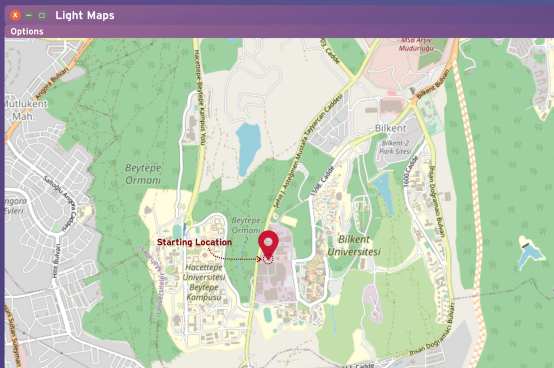


Figure : GPS Position on Offline Map

- The red icon indicates the current position. Due to GPS Module accuracy, minor location differences can be observed.
- The position change is updated at approximately 3-second intervals by the timer interrupt.
- All avenues, streets, offices' names are clearly seen on the image around the current location.



APPLICATIONS AREAS

Satellite-based navigation systems used in

- Telecommunication
- Aviation (Commercial / Military)
- Missile Launcher

We need to develop navigation systems and GPS to meet its critical need to precise locations in any battlespace, on land, sea or in the air.