Licenciatura em Engenharia Informática e Multimédia
2019/20

Project
USV-enautica vessel control mobile application

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Guiding:
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Model - Description

Summary of Objectives

The projects consists in the development of an android application capable of controlling a boat remotely and that's able to display the telemetry data from it.

Clients

ENIDH.

Principal Functions

This app should:

- process and display the communication system's data received
- control the connected boat remotely
- display a map with the boat's current location and its traveled route
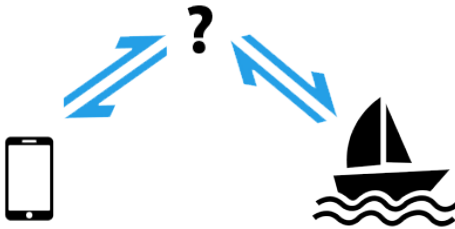
Model - Related Work

Related Work

- This app is integrated in ENIDH's Sea2Future project.
- A desktop version of our app has already been developed in the past.
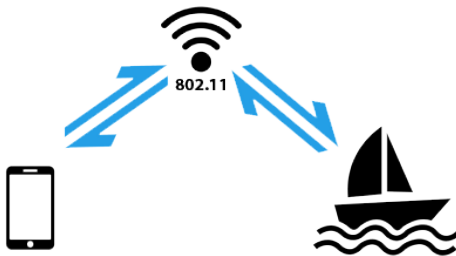
Advantages

- Easier portability.
- Easier access to the app.
- No need of extra input devices.
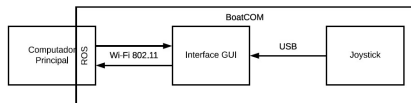
Model - Problem

Communication problem

Model - Solution

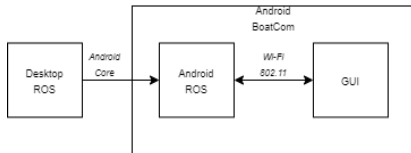Communication solution

Model - Original model vs Proposed model

Original Architecture
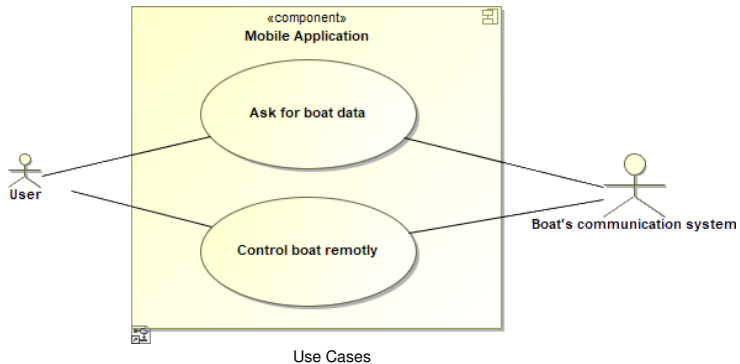

Proposed Architecture

Model - Use Cases

Use Cases

Implementation - GUI
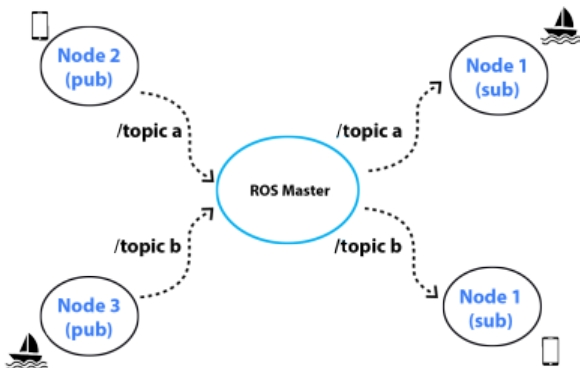

Gauge   MapView   JoystickView

GUI main libraries

Implementation - ROS

Android - Boat communication with ROS

Conclusion

What is done

- Basic GUI version
- Android - ROS Communication

To do

- Boat Simulator with ROS
- ROS nodes subscription and post
- GUI Final Version

Tasks Schedule

	Mar 23	Apr 6	Apr 20	May 4	May 18	Jun 1	Jun 15	Jun 29	Jul 13	Jul 27	Aug 10

Research

ROS functionalities
25 March 2020 - Approx. 8 Abril 2020

Android - ROS connecion libraries
1 April 2020 - Approx. 15 April 2020

Android libraries for GUI development
1 April 2020 - Approx. 15 April 2020

Libraries testing
15 April 2020 - Approx. 22 April 2020

Development

GUI development
Approx. 19 April 2020 - Approx. 17 June 2020

ROS - Android connection
Approx. 19 April 2020 - Approx. 13 May 2020

Boat simulation on ROS
Approx. 10 May 2020 - Approx. 20 June 2020

Testing

Boat simulator
Approx. 16 June 2020 - Approx. 22 June 2020

Boat
Approx. 25 June 2020 - Approx. 27 June 2020

Fix problems and bugs
Approx. 28 June 2020 - Approx. 7 July 2020