

Underwater Challenges

Sistema FIEB



PELO FUTURO DA INOVAÇÃO

REASEARCH FIELD

Matheus Anselmo <matheus.anselmo@fbter.org.br>

Advisor: Marco A. dos Reis

Robótica e Sistemas Autônomos, Senai Cimatec

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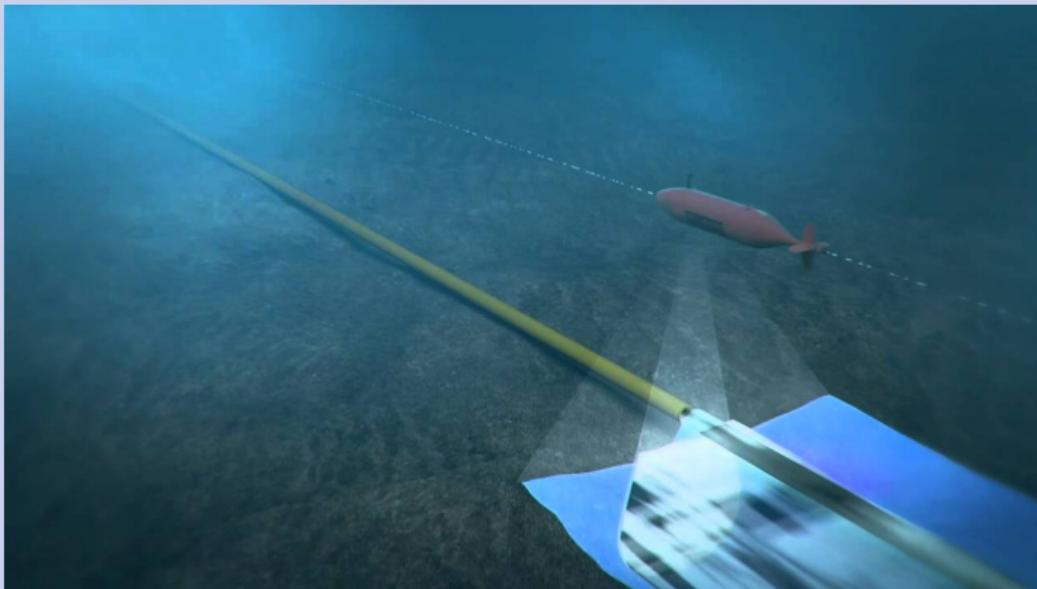
A problem

Subsea pipe monitoring is an important application for the oil and gas industry to carry out **maintenance** that can **predict great damage** to the environment and monetary loss.



A solution

Underwater robotics are a good way to try solve this problem or at least minimize.



The Challenges

The tasks the should be implement is operate a pipefollowing using undewrater vehicle BlueROV in a simulation at Gazebo.

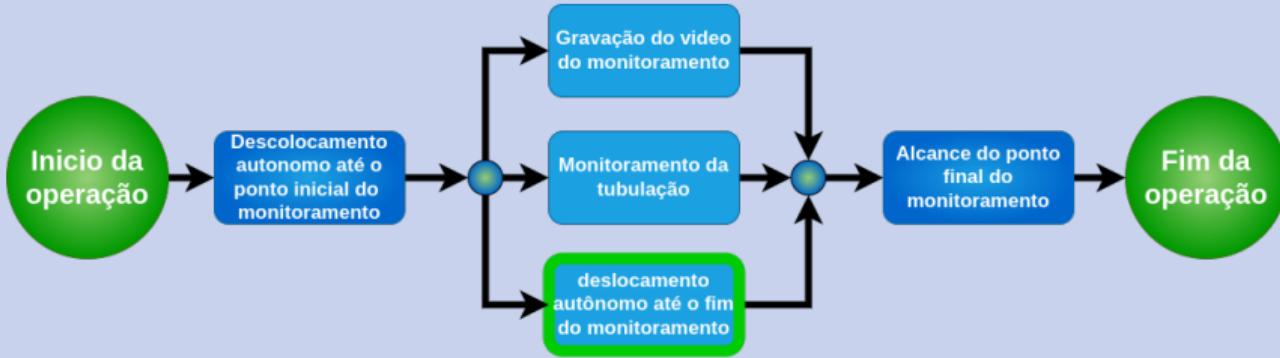
There are two challenges:

- A global
- A focused on underwater robotics field



Global Challenge

This challenge is broken down into **two stages**. The first checks the displacement of the vehicle from the initial point of the simulation to the initial pose of the identification of the pipe **autonomously**. The second is **monitoring the pipeline**. Artag will be placed at the initial and final point of identification



Minimal requirements

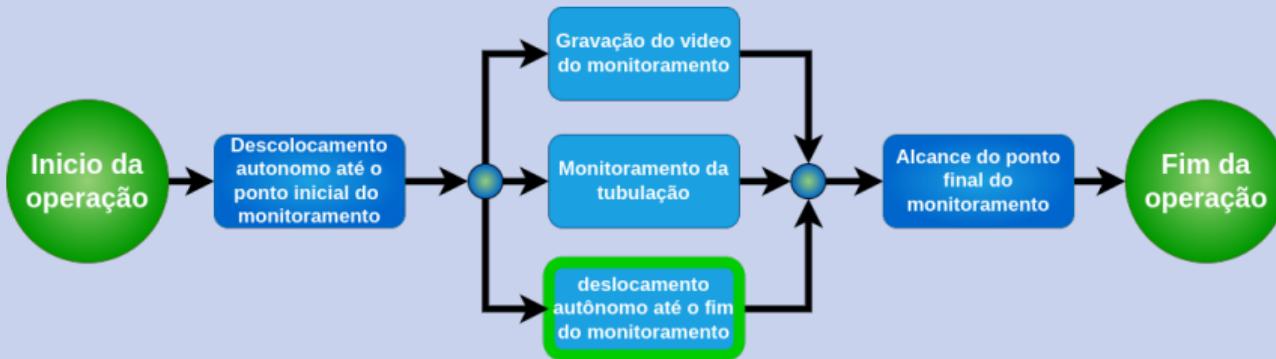
It is necessary to have:

- a intermediary knowlogdein ROS
- C++ and/or Python
- Computer Vision
- Will

Gains

Field Challenge

the Challenge has the objective of carrying out the identification of 100% of the tentative work, that is, the objective of performing human intervention operations.



Minimal requirements

It is necessary to have:

- a intermediary knowlogdein ROS
- C++ and/or Python
- Computer Vision
- Will

Gains

- knowlogde in ROS
- knowlogde and exprience in robotics.
- Computer Vision
- underwaterrobotics
- Will

Main Tools

In this Field of **Reasearch** and **developoments** there are great tools that can be used.
On the **research spectrum**



CmapTools



Scopus



Main Tools

On the **development research spectrum**

ROS

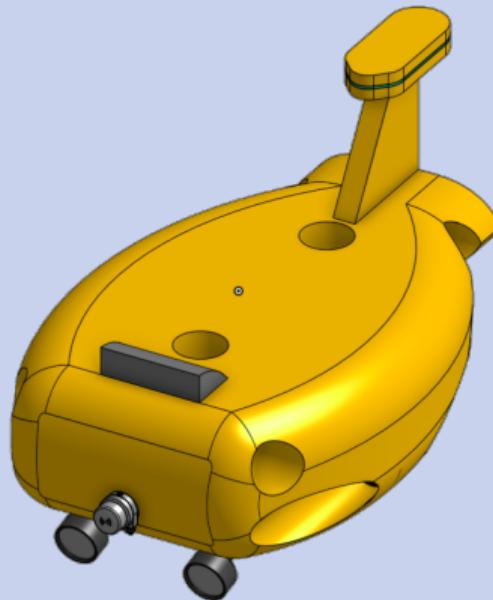


OpenVFOAM®

Projects

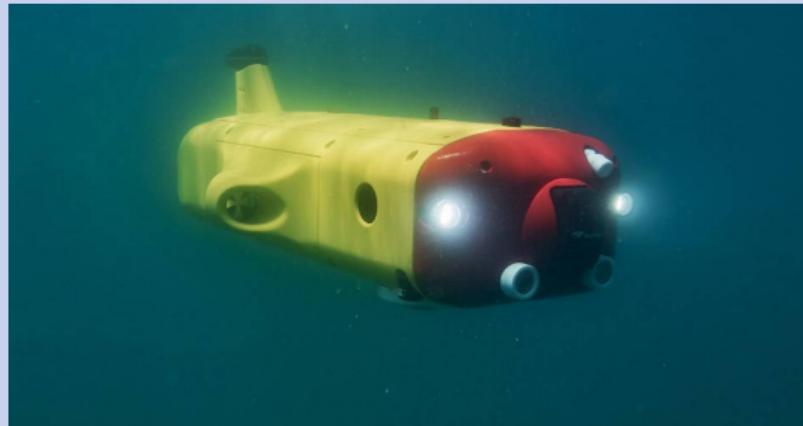
turBOT

The goal is to develop a short size AUV to operate in shallow waters.



FlatFish@ROS

This project is aimed to bring all stuff of FlatFISH to work on ROS



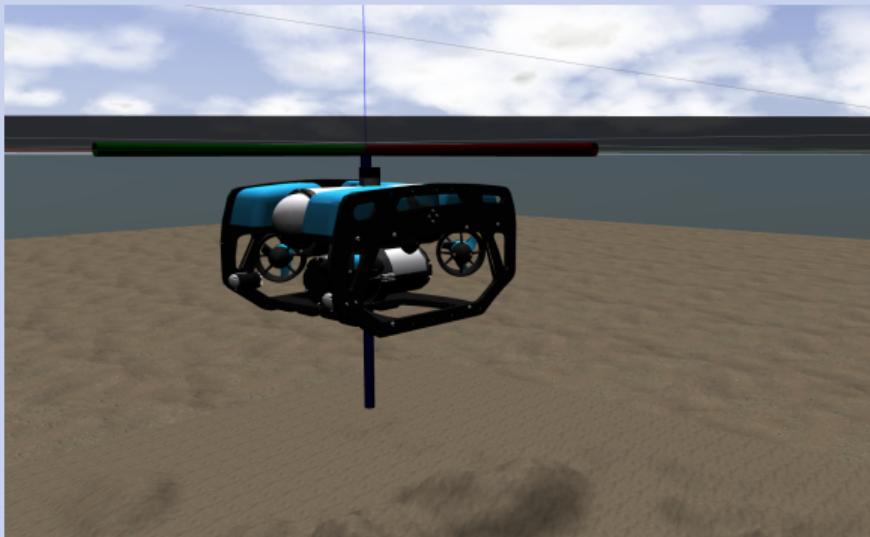
Pirabots

The goal is to test functionalities on ROVs: BlueROV and BirROV.



Challenges

Pipeline identification - Solo
Pipeline Following - In Group



Members

The members of the line of research are:



Marco Reis



Alexandre Adonai



Matheus Anselmo



Tâmara Lins

References (1)



Questions?

marco.a.reis@google.com