# MPC-MAP Assignment No. 5 - Report

## **Author:** Šimon Prasek

## **Date:** 25.03.2025

## Task 2

After implementing the A\* algorithm for the path planning I implemented algorithm to keep a clearance from obstacles, I set the clearance to 0.3 m.

## Task 3

Using the iterative algorithm provided in the lecture I implemented the smoothing function that you can see below in figure 1. I set parameter B to 0.7 so the path is smoother than if I would set it to smaller value.

A graph of a diagram

AI-generated content may be incorrect.

Figure - Planned path vs smooth planned path

In the figures bellow you can see some more planned paths – please note that in the indoor maps I had to set the PF to bet the main algorithm for path planning since I didn’t make the switching of the algorithms yet. For the indoor map planning I had to implement a part of code that is commented out that changes the path each X iterations of the code because of the estimated pose – sometimes the simulator crashes due to “Path not found” issue because it tries to calculate the path when the estimated pose is moving its location and it’s in the wall.

A diagram of a graph

AI-generated content may be incorrect.

Figure - Path planning in indoor maps

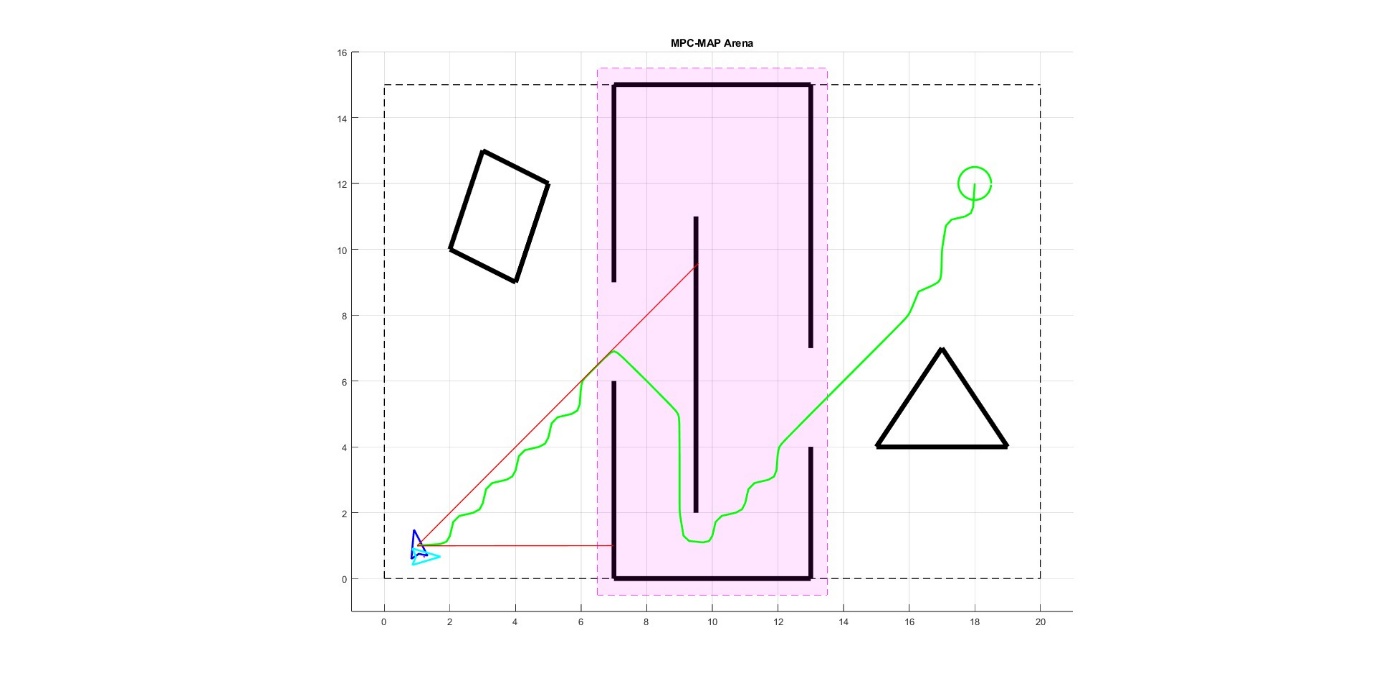


Figure - Mixed map, starting pose 1

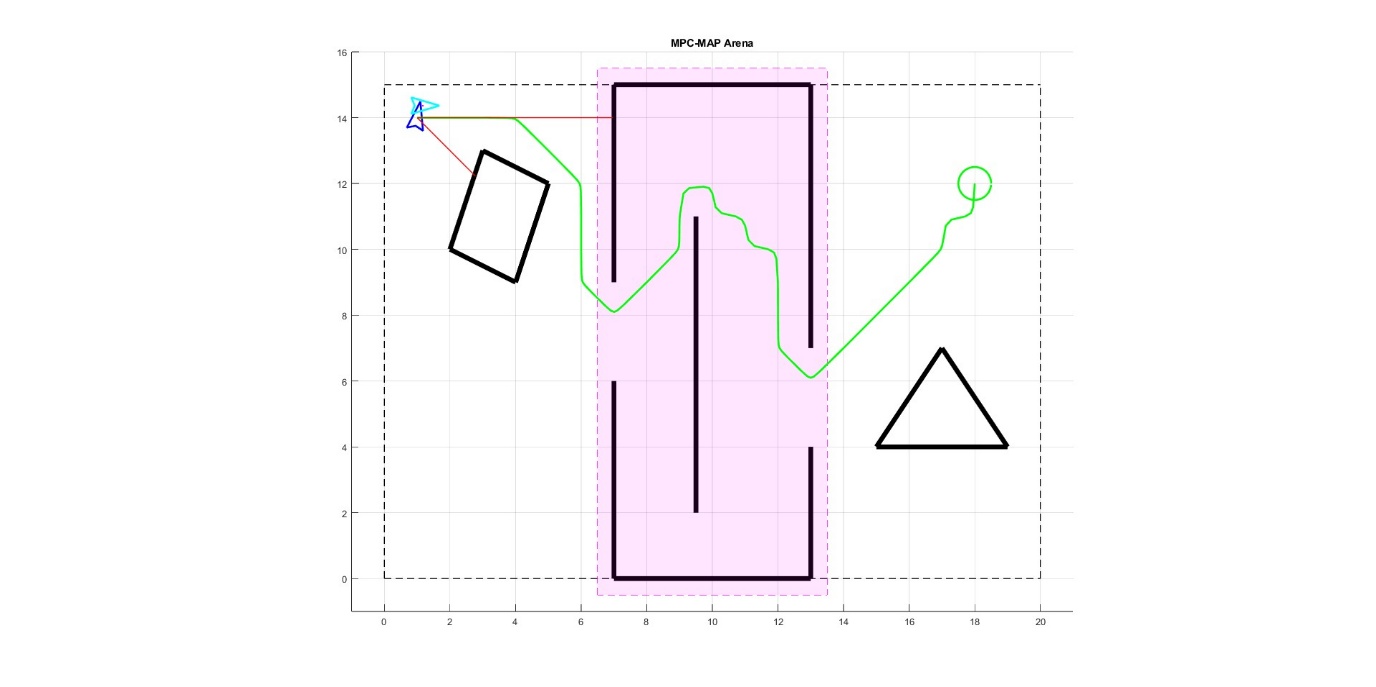


Figure - Mixed map, starting pose 2