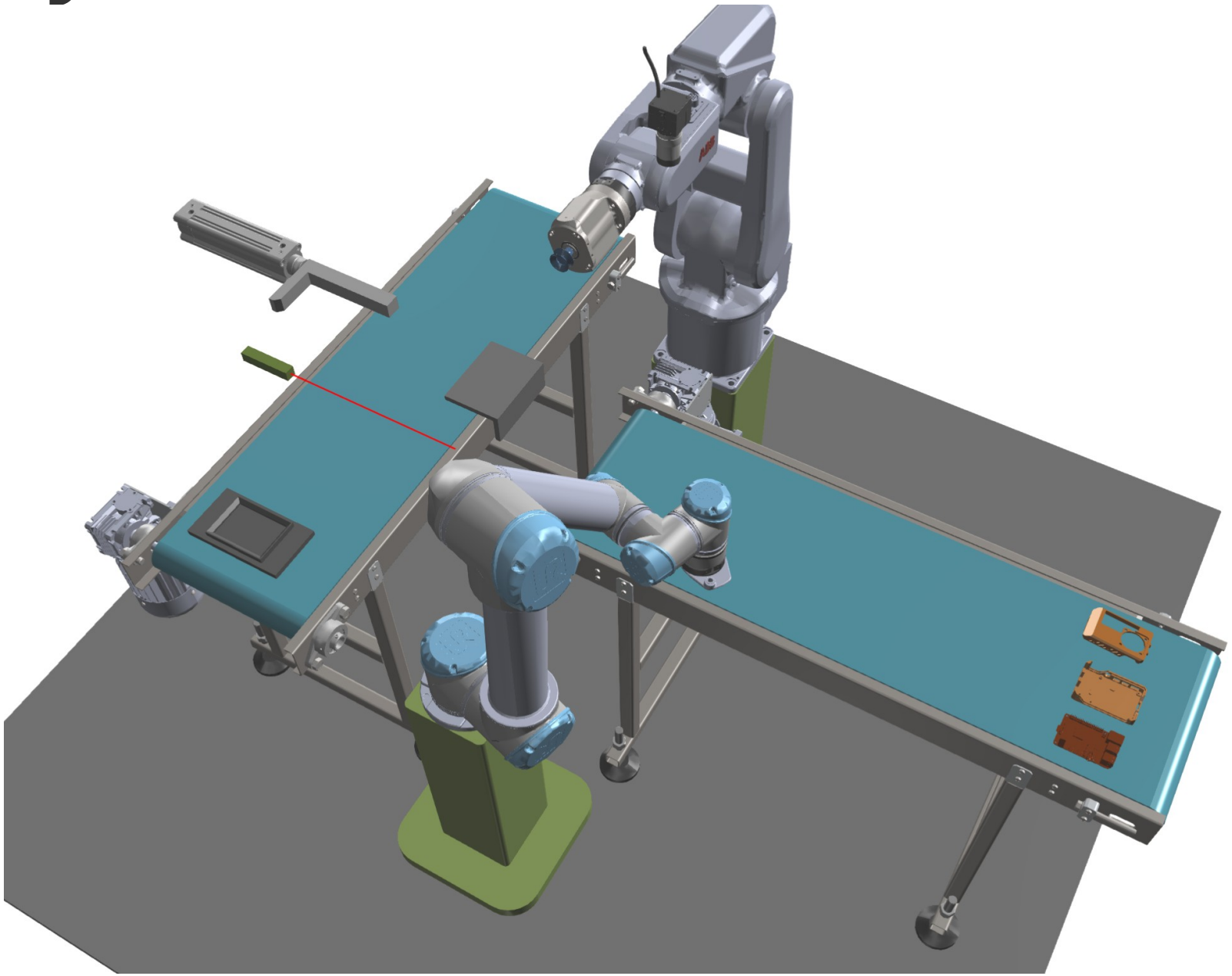
# Simulation UseCase

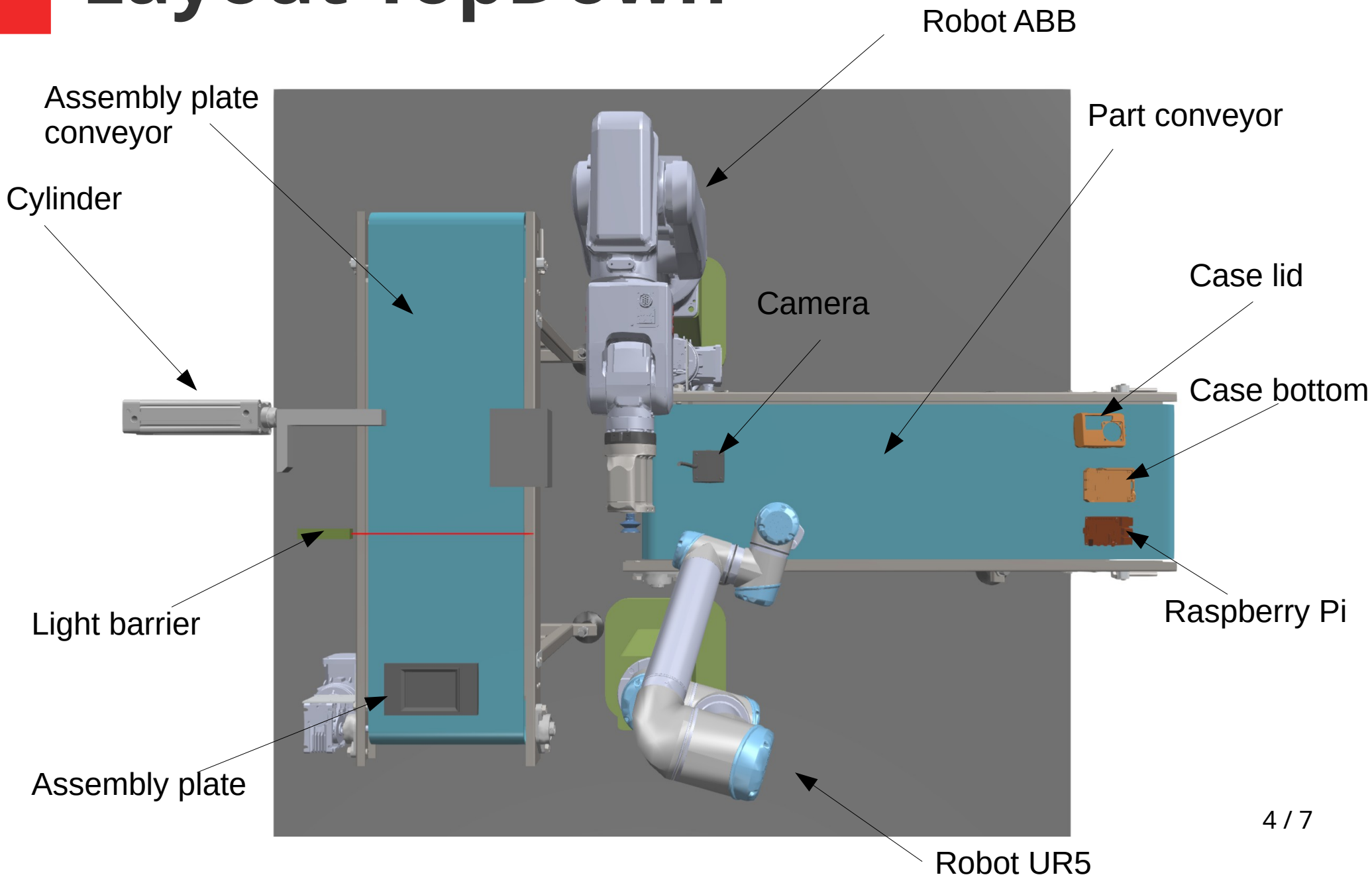
# Simulation Compoments

- UniversalRobots UR5
- ABB IRB 120
- Two conveyor belts
- Pneumatic cylinder
- Light barrier
- Camera

# Layout



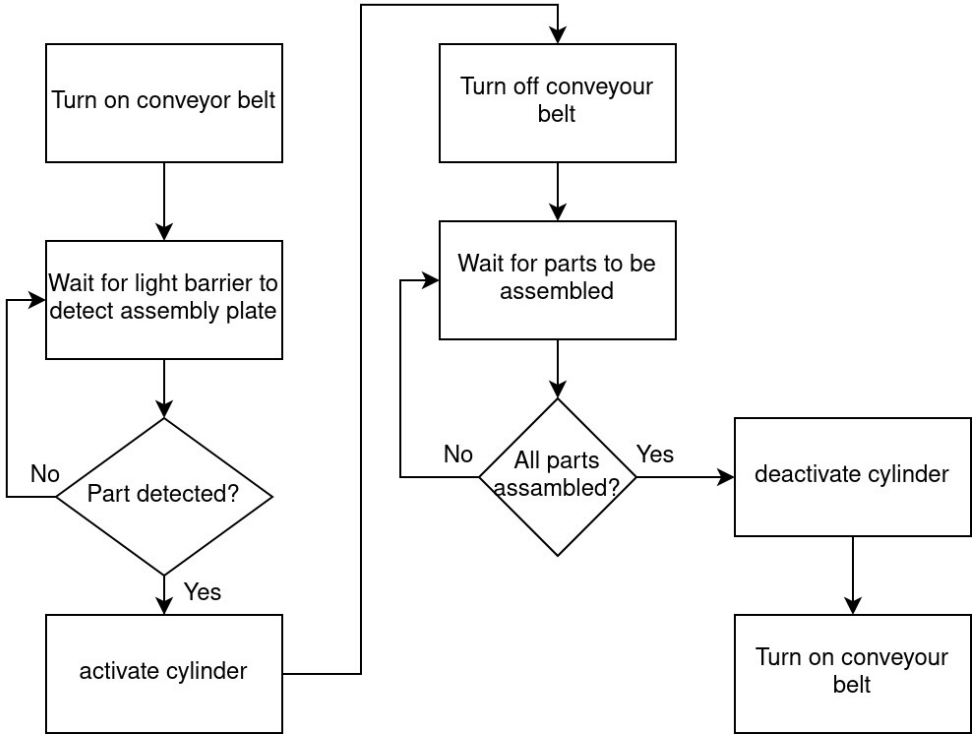
# Layout TopDown

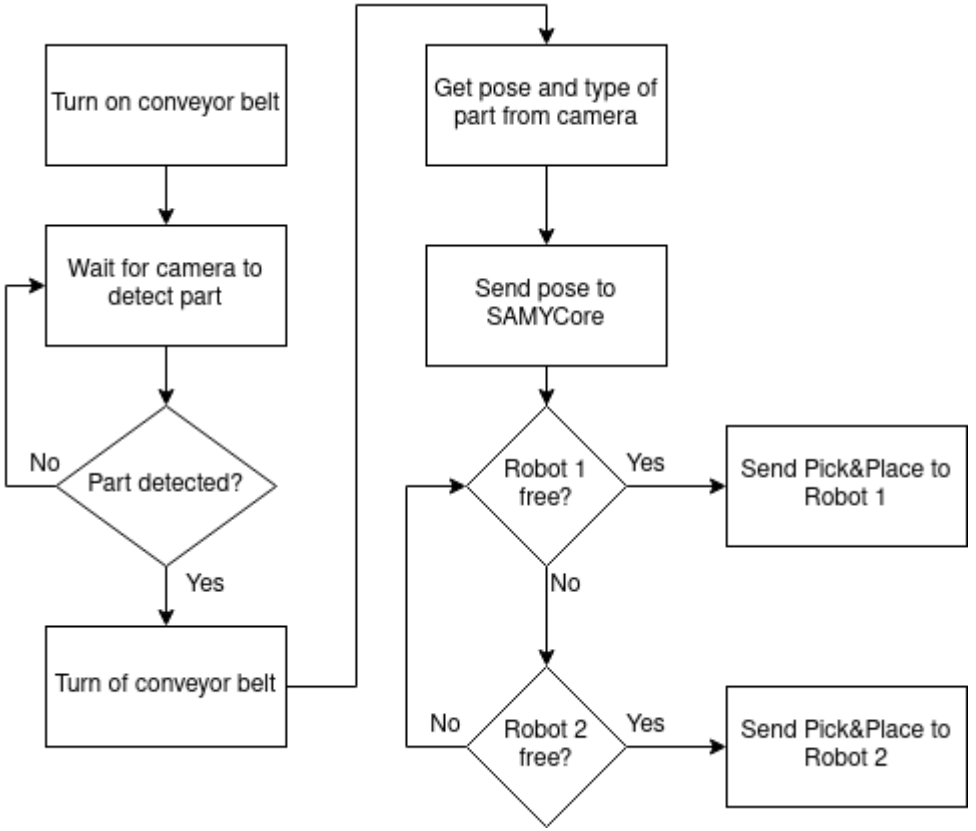


# Process Description

First a assembly plate is moved along the conveyor belt until it reaches the light barrier. Then the cylinder is activated, holding the assembly plate in a fixed position. Then the case bottom is placed on the part conveyor belt. It moves along the conveyor belt until the camera detects the part. This disables the conveyor belt. The camera detects the position of the part and also which part it is. The pose and the type of the part are send to the SAMYCore. The core then checks which robot is free and sends a pick&place skill to the corresponding plugin. The place position is determined by the type of the part. For each type there is a fixed place position stored.  The same process repeats for all three parts. Once all parts are assembled the cylinder gets deactivated and the conveyor belt is turned on again until the next assembly plate arrives at the light barrier.

# Process Diagram



# Process Data

- Fixed positions to place each of the parts
- The parts have to come in the right order