# 2.2 | URDF: Changing worlds

Gijs van der Hoorn

# Getting the simulation ready

Tasks:

❑ Remove unneeded bins
❑ Move bin to turtlebot delivery station
❑ Add a pedestal
❑ Add the second robot

```xml
1  <?xml version="1.0" ?>
2  <robot name="hrwros" xmlns:xacro="http://www.ros.org/wiki/xacro">
3
4    <!-- world -->
5    <link name="world" />
6
7    <!-- workcell -->
8    <xacro:include filename="$(find hrwros_support)/urdf/workcell/workcell.urdf.xacro"/>
9    <xacro:workcell_urdf workcell_parent="world_interface"/>
10
11   <!-- Robot1 Pedestal -->
12   <xacro:include filename="$(find hrwros_support)/urdf/robot_pedestal/robot_pedestal.urdf.xacro"/>
13   <xacro:robot_pedestal_urdf pedestal_prefix="robot1_" pedestal_parent="world_interface" pedestal_height="0.95">
14     <origin xyz="0.5 1.8 0.0" rpy="0 0 0"/>
15   </xacro:robot_pedestal_urdf>
16
17   <!-- Robot1 -->
18   <xacro:include filename="$(find ur_description)/urdf/ur10.urdf.xacro"/>
19   <xacro:ur10_robot prefix="robot1_" joint_limited="true"/>
20
21   <!-- Vacuum Gripper1 -->
22   <xacro:include filename="$(find hrwros_support)/urdf/vacuum_gripper/vacuum_gripper.urdf.xacro"/>
23   <xacro:vacuum_gripper_urdf prefix="vacuum_gripper1_" joint_prefix="vacuum_gripper1_joint"/>
24
25   <!-- bins -->
26   <xacro:include filename="$(find hrwros_support)/urdf/bin/bin.urdf.xacro"/>
27   <xacro:bin_urdf prefix="bin_1_"/>
28   <xacro:bin_urdf prefix="bin_2_"/>
29   <xacro:bin_urdf prefix="bin_3_"/>
30   <xacro:bin_urdf prefix="bin_4_"/>
31   <xacro:bin_urdf prefix="bin_5_"/>
32
33   <!-- Joints -->
34   <joint name="world_interface_to_world" type="fixed">
35     <parent link="world" />
```

```xml
<?xml version="1.0" ?>
<robot name="hrwros" xmlns:xacro="http://www.ros.org/wiki/xacro">

  <!-- robot system -->
  <xacro:include filename="$(find hrwros_support)/urdf/robot_system/robot_system.xacro"/>

  <!-- bins -->
  <xacro:include filename="$(find hrwros_support)/urdf/bin/bin.urdf.xacro"/>
  <xacro:bin_urdf prefix="bin_1_"/>

  <!-- depth camera -->
  <xacro:include filename="$(find hrwros_support)/urdf/depth_camera/depth_camera.urdf.xacro"/>
  <xacro:depth_camera_urdf prefix="depth_camera_"/>

  <!-- break beam -->
  <xacro:include filename="$(find hrwros_support)/urdf/break_beam/break_beam.urdf.xacro"/>
  <xacro:break_beam_urdf prefix="break_beam_"/>

  <!-- workcell -->
  <xacro:include filename="$(find hrwros_support)/urdf/workcell/workcell.xacro"/>

  <!-- Joints -->
  <joint name="workcell_to_world" type="fixed">
    <parent link="world" />
    <child link="world_interface" />
  </joint>

  <!-- a break_beam type sensor in the frame break_beam_frame -->
  <joint name="break_beam_joint" type="fixed">
    <parent link="world" />
    <child link="break_beam_world_interface" />
  </joint>

  <!-- a kinect camera in the frame kinect_camera_frame -->
  <joint name="camera_link" type="fixed">
    <parent link="world"/>
    <child link="depth_camera_world_interface" />
  </joint>

  <!-- a bin in the frame bin1_frame -->
  <joint name="bin_1_joint" type="fixed">
    <parent link="world" />
    <child link="bin_1_base_link" />
    <origin xyz="-8.0 -2.2 0.0" rpy="0 0 0" />
  </joint>


<link name="pedestal">
  <visual>
    <geometry>
      <box size="1 1 1" />
    </geometry>
  </visual>
</link>

<joint name="pedestal_joint" type="fixed">
  <parent link="world" />
```
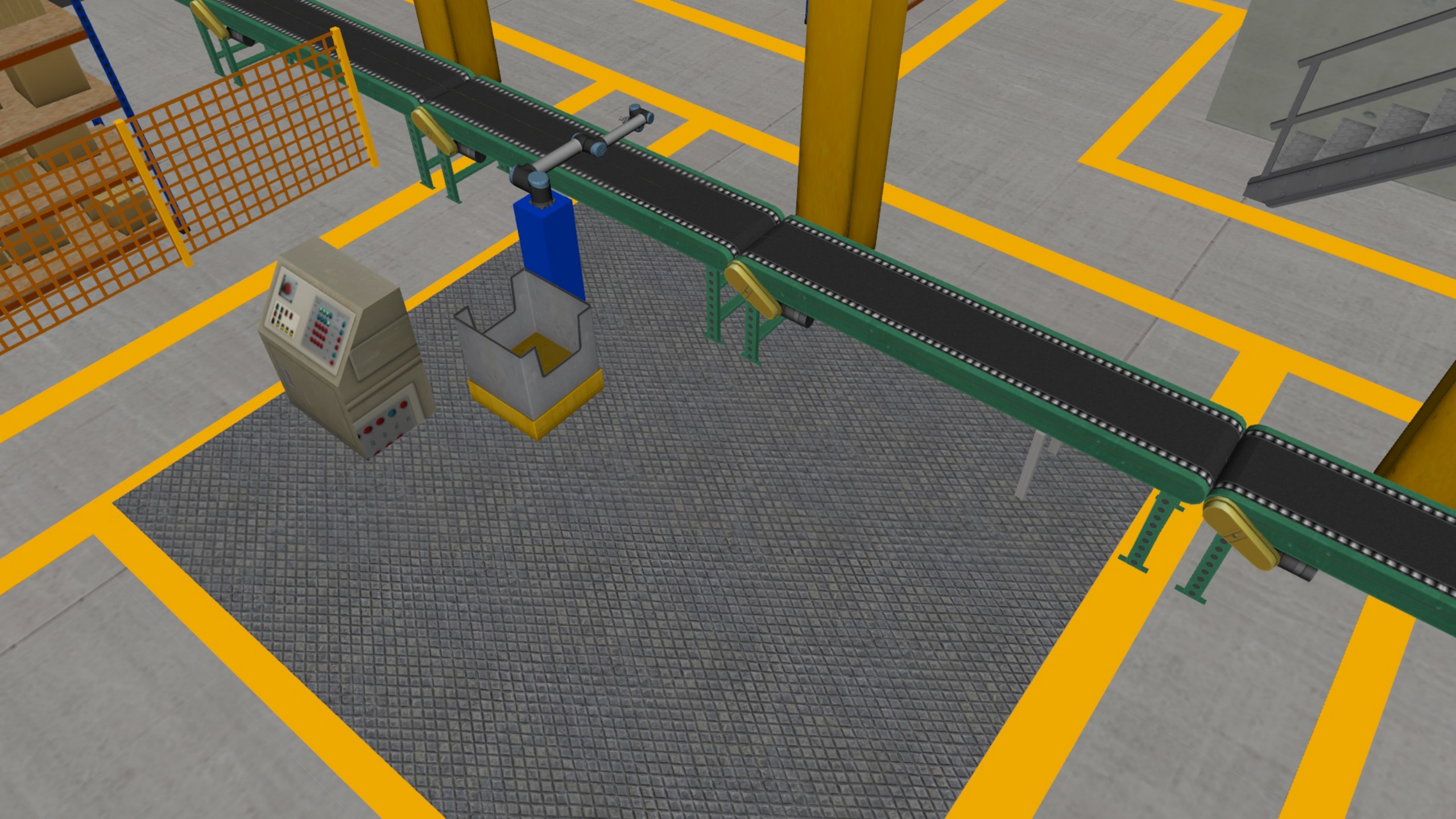
```
^G Get Help        ^O WriteOut         ^R Read File         ^Y Prev Page         ^K Cut Text          ^C Cur Pos
^X Exit            ^J Justify          ^W Where Is          ^V Next Page         ^U UnCut Text        ^T To Spell
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