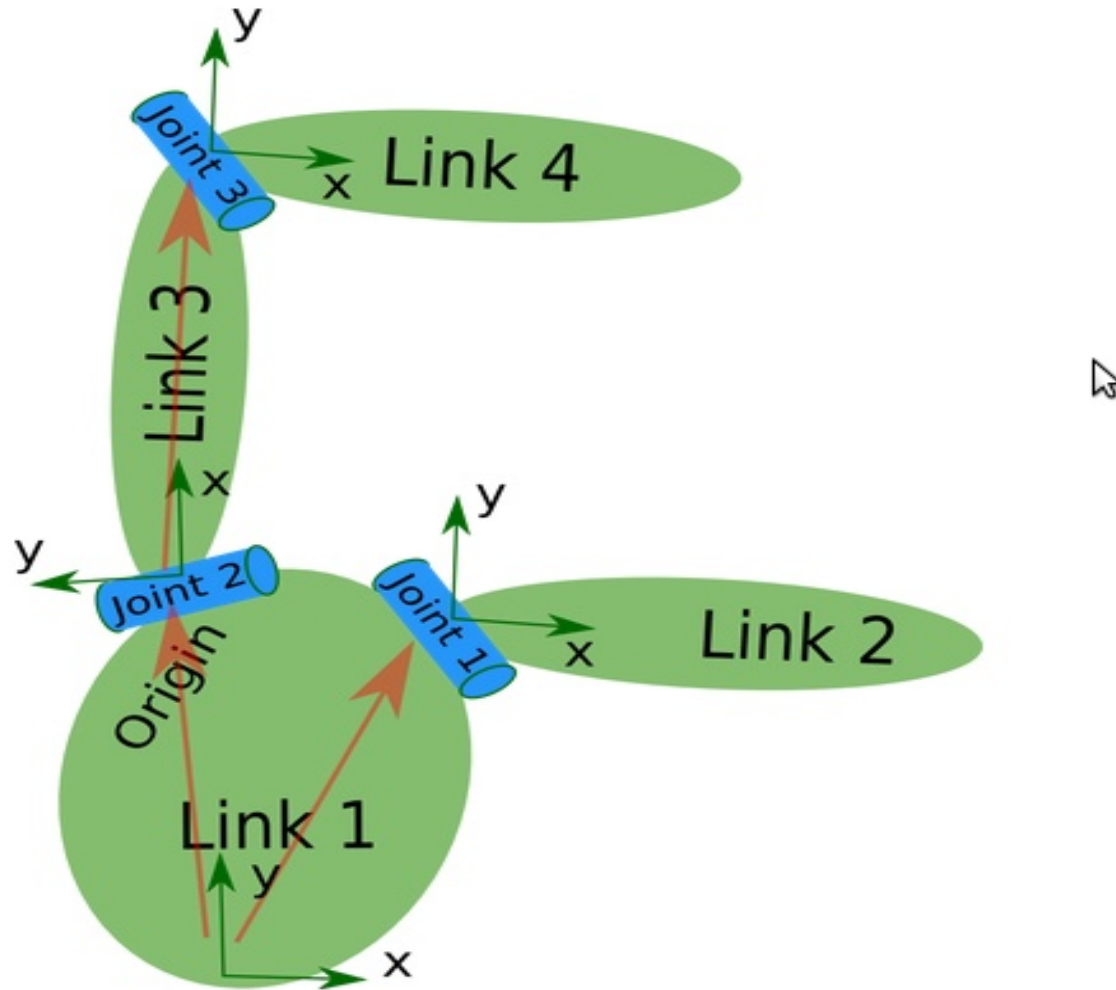


Unified Robot Description Format (URDF)



- Αρχεία τύπου XML, για την περιγραφή ενός ρομπότ.
- Υποθέτει ότι το ρομπότ αποτελείται, από απαραμόρφωτα σώματα (links), συνδεδεμένα μεταξύ τους με αρθρώσεις (joints).
- Καλύπτει τους τομείς:
 - κινηματική και δυναμική περιγραφή του ρομπότ
 - Οπτικοποίηση του ρομπότ
 - Μοντέλο κρούσης

Joint types:

- revolute - a hinge joint that rotates along the axis and has a limited range specified by the upper and lower limits.
- continuous - a continuous hinge joint that rotates around the axis and has no upper and lower limits
- prismatic - a sliding joint that slides along the axis, and has a limited range specified by the upper and lower limits.
- fixed - This is not really a joint because it cannot move. All degrees of freedom are locked. This type of joint does not require the axis, calibration, dynamics, limits or safety_controller.
- floating - This joint allows motion for all 6 degrees of freedom.
- planar - This joint allows motion in a plane perpendicular to the axis.

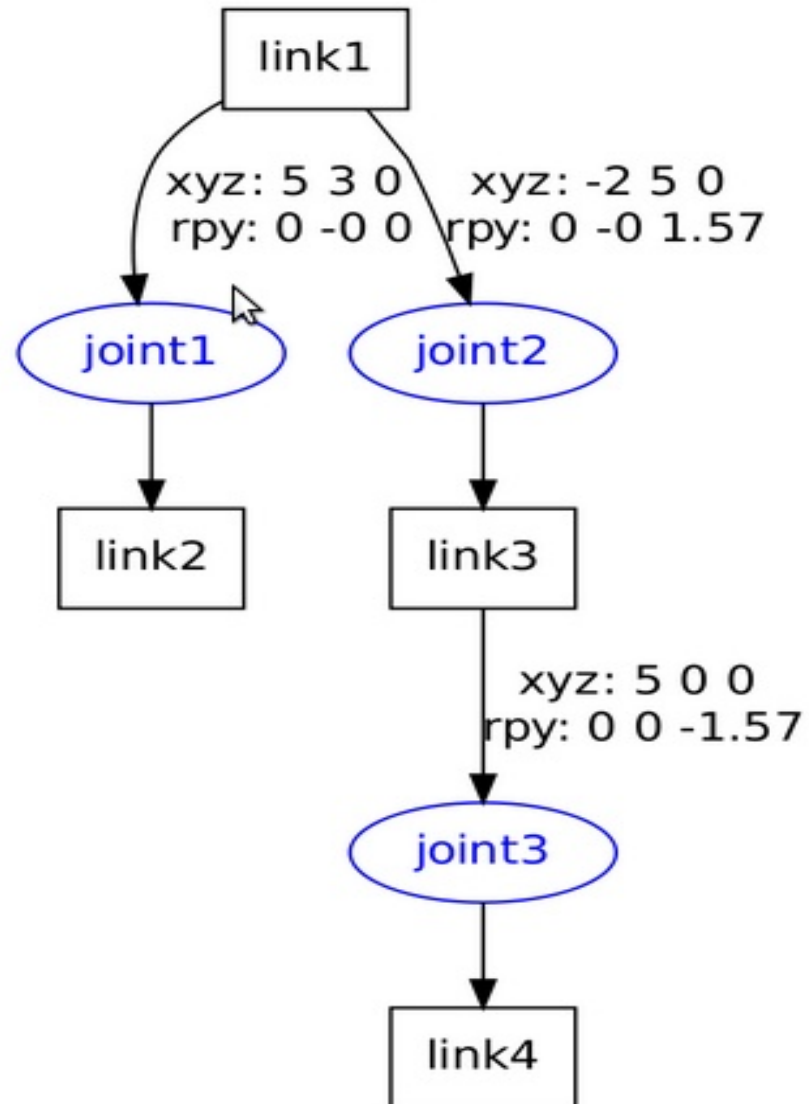
- 1 <link name="my_link">
- 2 <inertial>
- 3 <origin xyz="0 0 0.5" rpy="0 0 0"/>
- 4 <mass value="1"/>
- 5 <inertia ixx="100" ixy="0" ixz="0" iyy="100" iyz="0" izz="100" />
- 6 </inertial>
- 7
- 8 <visual>
- 9 <origin xyz="0 0 0" rpy="0 0 0" />
- 10 <geometry>
- 11 <box size="1 1 1" />
- 12 </geometry>
- 13 <material name="Cyan">
- 14 <color rgba="0 1.0 1.0 1.0"/>
- 15 </material>
- 16 </visual>
- 17 </link>

- 1 <robot name="test_robot">
- 2 <link name="link1" />
- 3 <link name="link2" />
- 4 <link name="link3" />
- 5 <link name="link4" />
- 6
- 7 <joint name="joint1" type="continuous">
- 8 <parent link="link1"/>
- 9 <child link="link2"/>
- 10 </joint>
- 11
- 12 <joint name="joint2" type="continuous">
- 13 <parent link="link1"/>
- 14 <child link="link3"/>
- 15 </joint>
- 16
- 17 <joint name="joint3" type="continuous">
- 18 <parent link="link3"/>
- 19 <child link="link4"/>
- 20 </joint>
- 21 </robot>

- `roslaunch urdfdom check_urdf my_robot.urdf`
- Έξοδος:
- robot name is: test_robot
- ----- Successfully Parsed XML -----
- root Link: link1 has 2 child(ren)
- child(1): link2
- child(2): link3
- child(1): link4

- `<origin xyz="-2 5 0" rpy="0 0 1.57" />`
- `<axis xyz="0 1 0" />`
- `<joint name="joint2" type="continuous">`
- `<parent link="link1"/>`
- `<child link="link3"/>`
- `<origin xyz="-2 5 0" rpy="0 0 1.57" />`
- `<axis xyz="-0.707 0.707 0" />`
- `</joint>`

- `roslaunch urdfdom urdf_to_graphviz my_robot.urdf`



- `$ cd ~/catkin_ws/src`
- `$ catkin_create_pkg testbot_description urdf`
- `$ cd testbot_description`

- `mkdir urdf`

- `/MYROBOT_description`
- `package.xml`
- `CMakeLists.txt`
- `/urdf`
- `/src`
- `/meshes`
- `/materials`
- `/cad`