



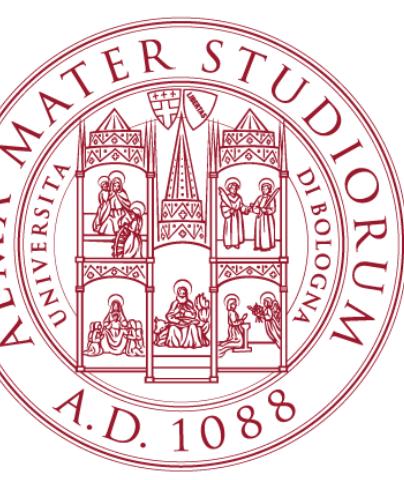
# Formation control in ROS2

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# Workspace preparation

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Activate ROS2

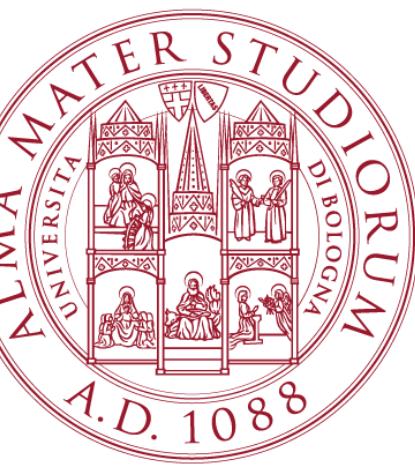
```
./opt/ros/humble/setup.bash
```

Create a new directory that will contain the ROS2 workspace

```
mkdir -p formation_ros2_ws/src  
cd formation_ros2_ws/src
```

Create a package called **formation\_control** from the **src** directory using

```
ros2 pkg create --build-type ament_python formation_control
```



# Package configuration

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Add dependencies in **package.xml**

```
<exec_depend>rclpy</exec_depend>
<exec_depend>std_msgs</exec_depend>
<exec_depend>ros2launch</exec_depend>
```

Edit the **setup.py** to specify the launch file **max\_launch.py** as

- (i) include the header "**from glob import glob**" and to the **data\_files** list:

```
("share/" + package_name, glob("launch_folder/formation_launch.py"))
```

- (ii) specify the entry points, i.e., the name of the ROS2 node associated to the source file **the\_agent.py**

```
"generic_agent = formation_launch.the_agent:main"
```



# Package build and run

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Include the (single) source file **the\_agent.py** of the ROS2 node, which is to be located at  
**formation\_ros2\_ws/src/formation\_control/formation\_control**

From the ROS2 workspace root **formation\_ros2\_ws** build the package  
**colcon build --symlink-install --packages-select formation\_control**

Then

- activate ROS2 (if needed)  
**. /opt/ros/humble/setup.bash**
- run  
**. install/setup.bash**
- execute the launch file  
**ros2 launch formation\_control formation\_launch.py**