Follow me behavior (detection part)

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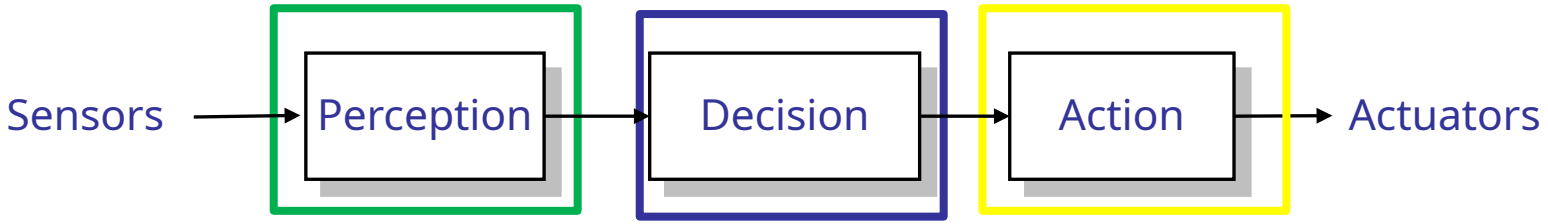
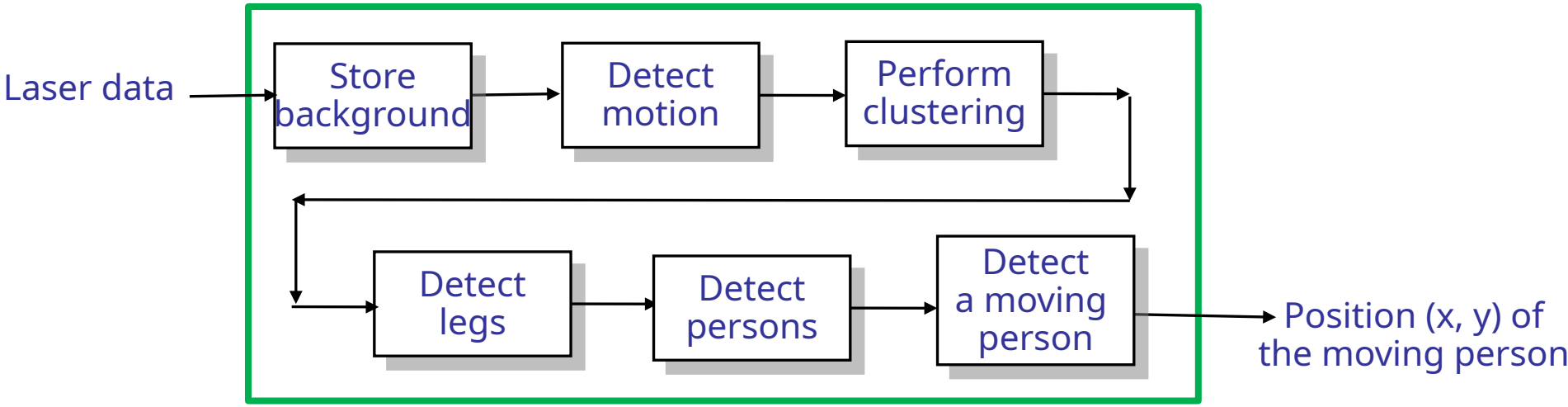
Follow me behavior (perception part): definition (1/2)

- The goal of the lab is to implement the laser processing to detect a moving person;
- Our model of a moving person has:
  - Two legs that are moving;
  - Two legs with a maximum distance of 70cms between them;
  - A leg is a cluster with a size between 5cms and 25cms;
  - A moving cluster is a cluster that has at least 75% of its hits that are dynamic;

Follow me behavior (perception part): definition (2/2)





- Each time, we receive new laser data, this process is done

Follow me behavior (perception part): installation + implementation

1. In ~/ros2_ws/src/follow_me/src/detection_node.cpp:
   Nothing to implement here. This is the main node update loop which calls the functions implemented in datmo.cpp. You have to read and understand the method Update.

2. In ~/ros2_ws/src/follow_me/src/datmo.cpp:
   You have to implement all the methods in the file
   1. Store_background ;
   2. Reset_motion ;
   3. Detect_current_motion ;
   4. Detect_motion;

   5. Perform_basic_clustering ;
   6. Perform_advanced_clustering;

   7. Detect_legs;
   8. Detect_persons;
   9. Detect_a_moving_person;

Follow me behavior (perception part): How to run

- Open 2 terminals:
  1. Terminal to run your nodes and Rviz :

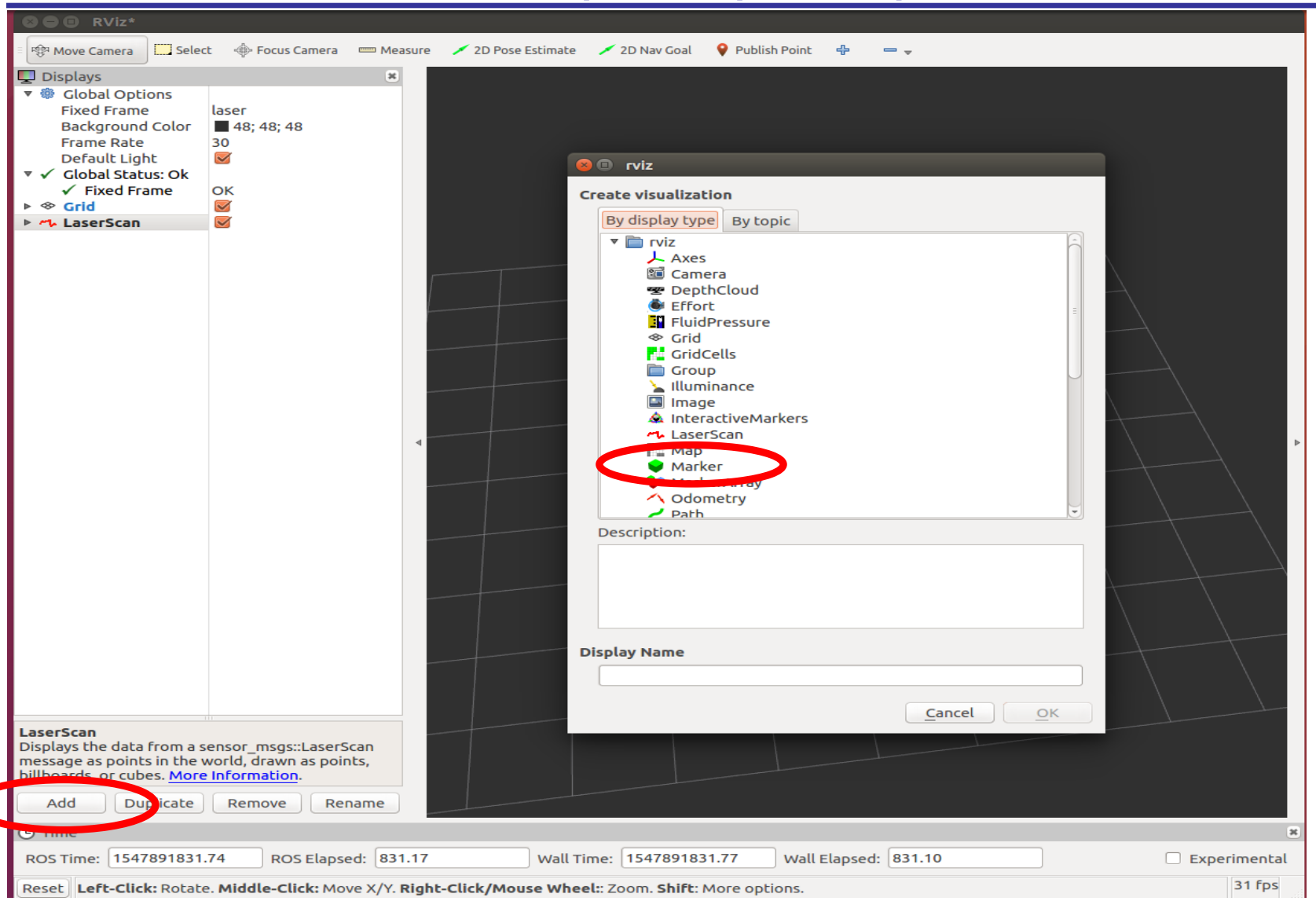
     ```
     cd ~/ros2_ws/src/follow_me/scripts
     ./start_robair_detection_only.sh
     ```

  2. [Optional] Terminal to play a rosbag file if a robot is not available :

     ```
     cd ~/ros2_ws/data_for_labs/follow_me/detection/old_laser
     ros2 bag play <data_file>.bag2
     ```

- **Alternative option :**
  Instead of one terminal for all ros nodes using the script, you can also create one tab for each node in a terminal, and run the command for each node and Rviz individually.
  Open the scripts under follow_me/src/scripts to find the commands of the form :
  `ros2 run <package_name> <node_name>`

Follow me behavior (perception part): Rviz



Follow me behavior (perception part): Rviz