

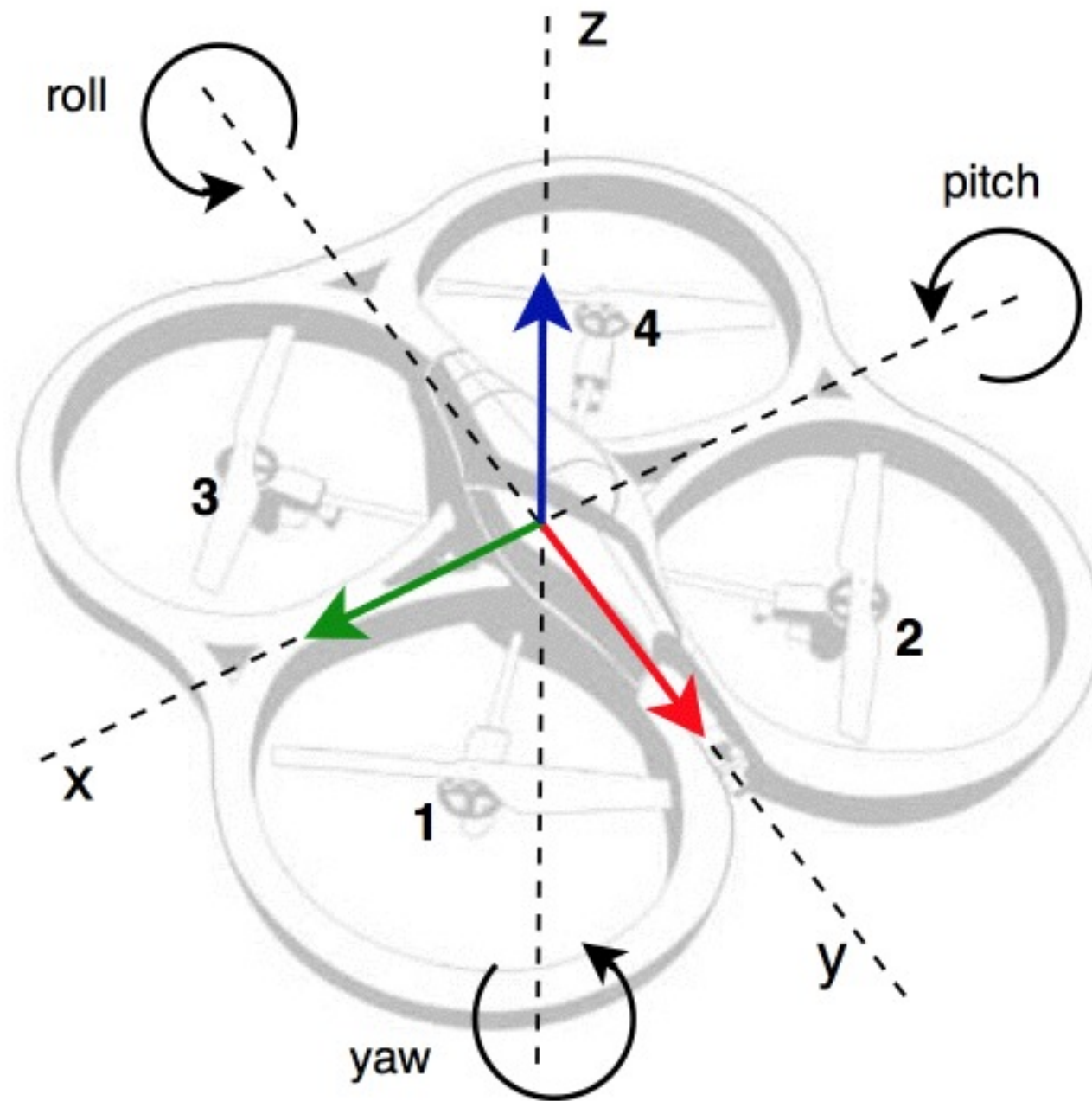
Lab Course, SS15: Mobile Robots MA-INF 4310

Planning and executing flight from starting position to goal with Parrot AR.Drone type1

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October 15, 2015, University Bonn, Computer Science Department



Parrot AR.Drone

Working with AR.Drone

- Ardrone autonomy is a ROS driver for Parrot AR-Drone 1.0 and 2.0 quadrocopter.
 - *roslaunch ardrone_autonomy ardrone_driver*
- *roslaunch tum_ardrone tum_ardrone.launch*

Making a point cloud map

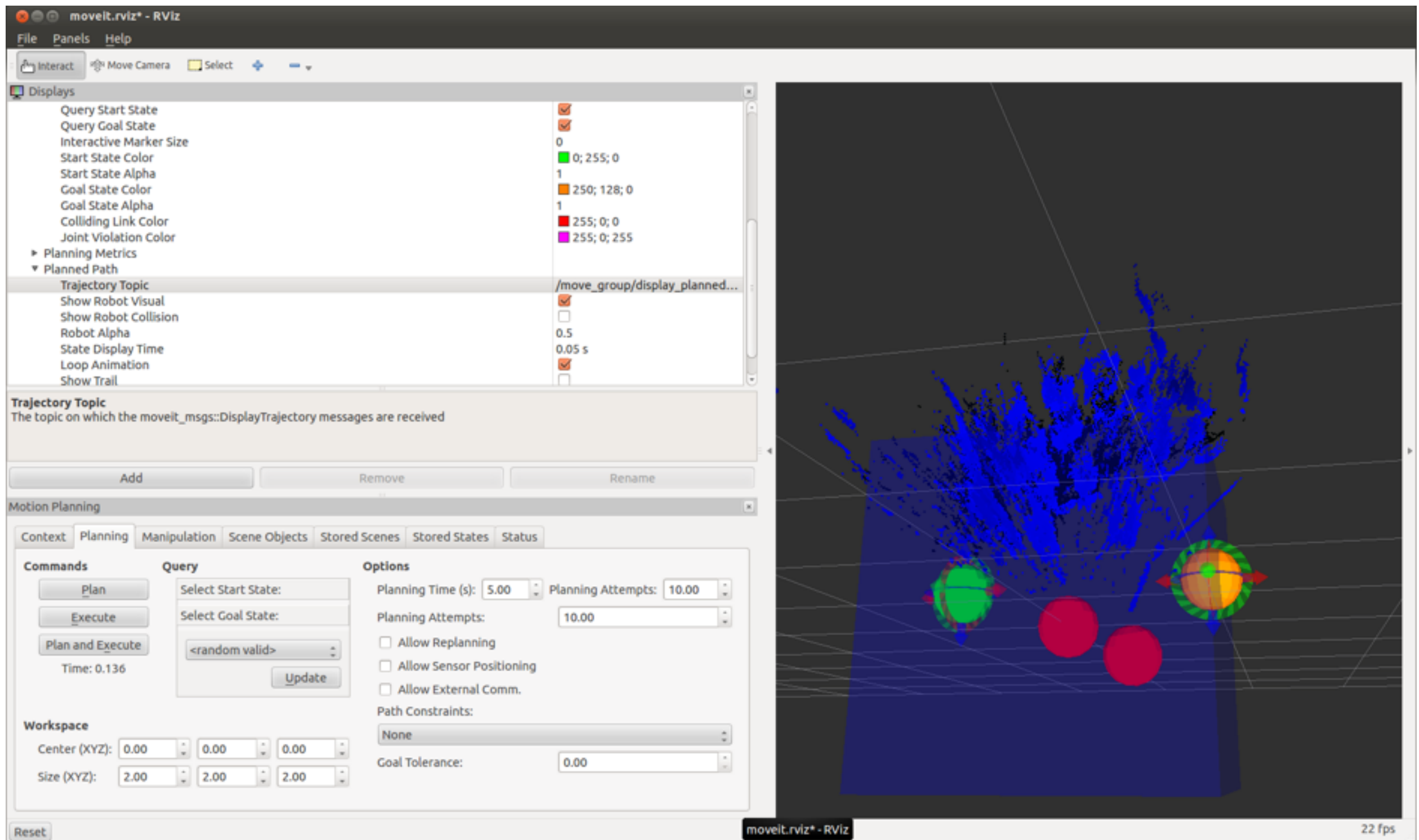
LSD-SLAM is a novel approach to real-time monocular SLAM. It is fully direct (i.e. does not use keypoints / features) and creates large-scale, semi-dense maps in real-time on a laptop.

In order to make a point cloud map lsd_slam package is used. One can just control the drone, using tum_ardrone package and start lsd_slam with command:

```
roslaunch lsd_slam_core live_slam image:=/ardrone/front/image_rect  
_calib:=/src/lsd_slam/calibration_front.cfg
```

Setting up MoveIt! for AR.Drone

- The only thing, that has to be done manually is preparing the urdf file for the robot.
- Use this file in setup assistant, that can be started by:
 - *roslaunch moveit_setup_assistant setup_assistant.launch*
- MoveIt! planner can be started with command (if package was saved in folder ardrone_moveit):
 - *roslaunch ardrone_moveit demo.launch*



Loading point cloud to RViZ of MoveIt! and planning path