Using Google Tango with ROS

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What is Google Tango?

Tango Stack

- Motion Tracking -- *VIO*
- Area Learning -- *Localization Maps*
- Depth Perception -- *Point clouds*

- 3DR and other support libraries

What is Google Tango?

Tango Platforms

- Sensors
  - Wide-angle, global shutter camera (640x480)
  - Depth camera (172x144, 5 Hz, 5m range)
  - Color camera (23 MP)
  - IMU

- Available Tango devices:
  - Tango development tablets (EOL)
  - Lenovo Phab2Pro
  - Asus Zenfone AR
  - Inuitive devices (USB device!)
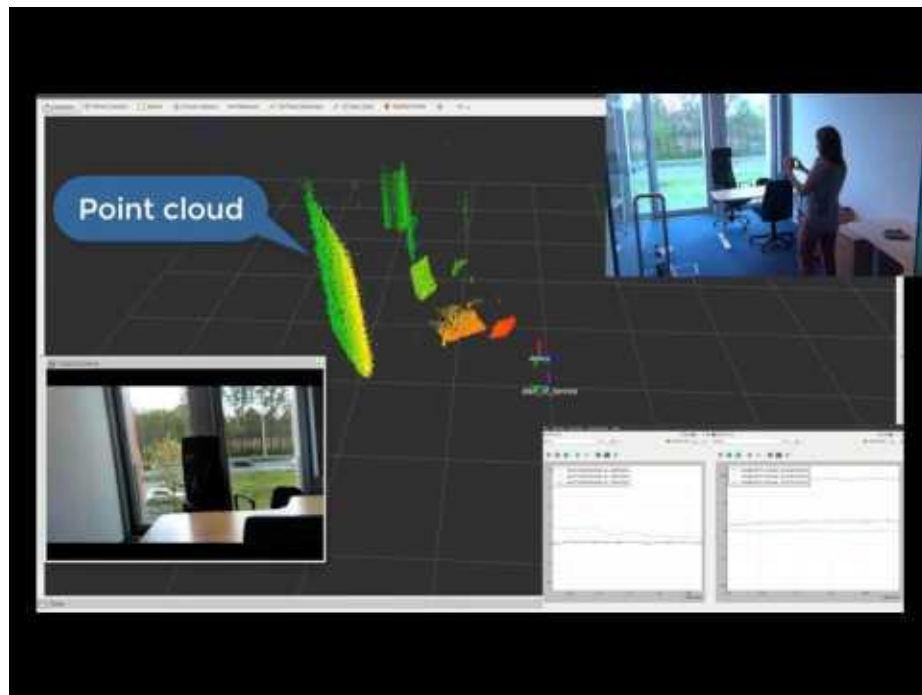
What is Tango ROS Streamer?

Main goal: Be able to use the Google Tango technology on your ROS-enabled robot.

- App available on PlayStore for free
- Fully open-sourced on Github
- Tutorials on http://wiki.ros.org/tango_ros_streamer
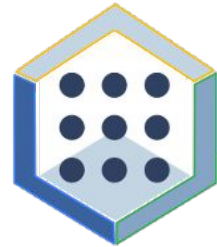
What does Tango ROS Streamer provide?

- A cross platform roscpp nodelet
  - Publishes
    - 6D pose of the device
    - Images
    - Pointcloud
    - Meshes
    - Occupancy grid
  - All Tango configuration can be done through ROS parameters.
  - Provides ROS services to handle
    - Tango lifecycle
    - Maps
- ROS Android application to manage the nodelet

How can you use Tango ROS Streamer for your robot?

Example: Turtlebot navigation using existing ROS tools/libraries and Tango ROS Streamer:

- Mapping and localization using Tango
- Obstacle avoidance using Tango point cloud
- Navigation with ROS Nav Stack
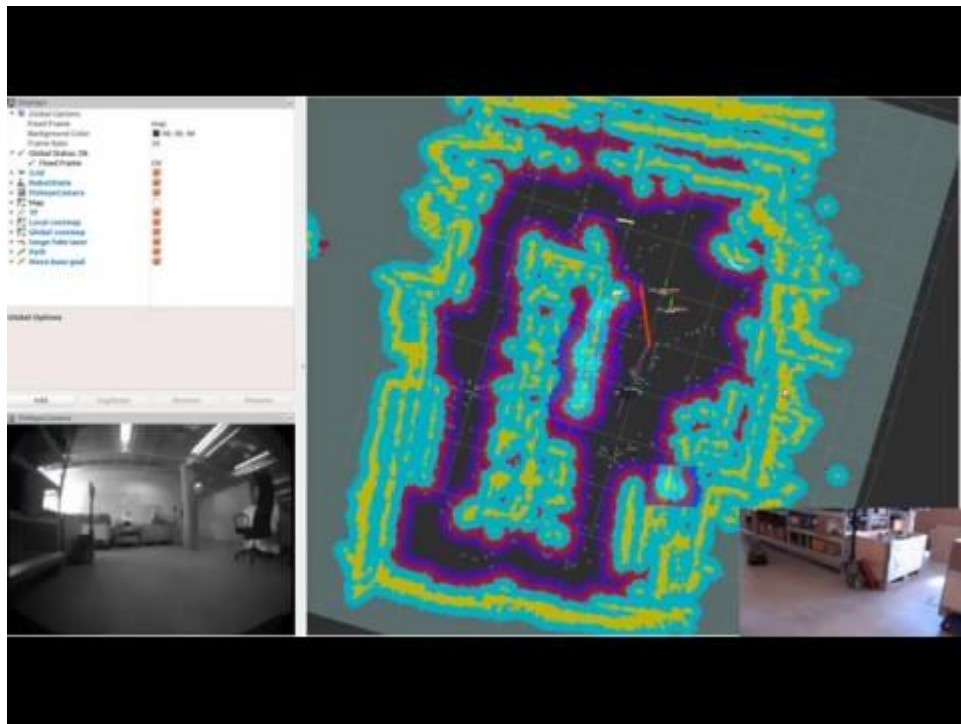
Want to learn more?

Come visit us at the Tango booth

Thanks for listening !