RTabMap Build (Ubuntu 18)

This describes the steps for building the modified version of RtabMap. This version of Rtabmap has been modified to support semantic segmentation registration.

Follow the instruction from the following link :

https://bitbucket.xrcs.jhuapl.edu/projects/SLAMR01/repos/rtabmap_apl/browse/README.md

ROS wrapper :

https://bitbucket.xrcs.jhuapl.edu/projects/SLAMR01/repos/rtabmap_ros/browse/README.md

There are some packages that are not enforced as dependencies but are needed to support some basic functionality.

ROS package are pull into the directory {ros_workspace}/src.

APL:

semantic segmentation package (**objectrecognition** APL): https://bitbucket.xrcs.jhuapl.edu/scm/slamr01/objectrecognition.git

> you will need to download the weights trained for this inference model. You should place them in a folder called
>
> ~/user_workspace/models_weights/
>
> The links to the weights: https://confluence.xrcs.jhuapl.edu/confluence/x/NwIsBg

navmap package :   https://bitbucket.xrcs.jhuapl.edu/scm/slamr01/navmap.git

> **navmap_core** package has the main launch files that runs the mapping and planner nodes with it's corresponding configurations.
>
> > It depends with capra packages.
> >
> > EXAMPLES:

```
# mapping only with sensors
roslaunch navmap_core rtabmap_mapping_rs.launch

# Mapping playback from rosbags
roslaunch navmap_core rtabmap_mapping_playback_rs.launch rosbag_file_path:= {path_to_rosbag}

# mapping + APL RTK with sensors on platform
roslaunch navmap_core rtk_rtabmap_mapping.launch

# Mapping + APL RTK playback from rosbags
roslaunch navmap_core rtk_rtabmap_mapping_playback_rs.launch rosbag_file_path:= {path_to_rosbag}
```

Open Source: I place them in a sub-folder call {ros_workspace}/src/pkg_dependencies

Octomap packages :

> octomap_msgs, octomap_ros, octomap_rviz_plugins

image_pipeline packages: https://github.com/ros-perception/image_pipeline.git

> branch : melodic

sensors packages (platform- Jetson): I place them in a sub-folder call {ros_workspace}/src/

realsense-ros package: https://github.com/IntelRealSense/realsense-ros.git

> You would want to use the latest tag for melodic (2.2.23), and you would need to install the DSK library.
>
> link to reference: https://confluence.xrcs.jhuapl.edu/confluence/x/RYOpB
>
> **depends packages:**

ddynamic_reconfigure : **https://github.com/pal-robotics/ddynamic_reconfigure.git**