Rosbag을 통한 시뮬레이션 환경 구축

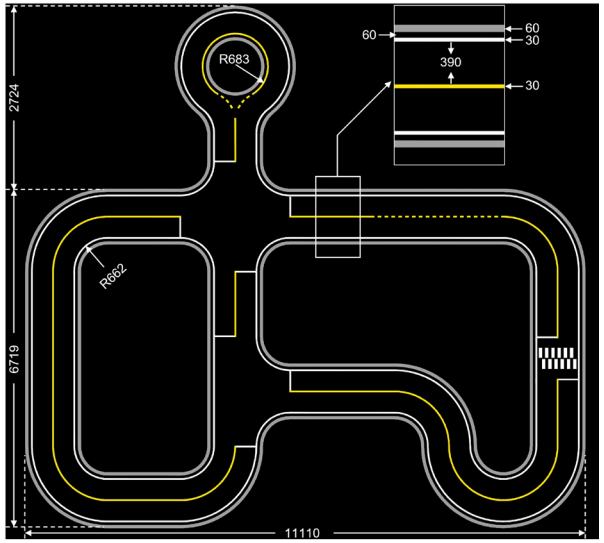
목 차

01 rosbag

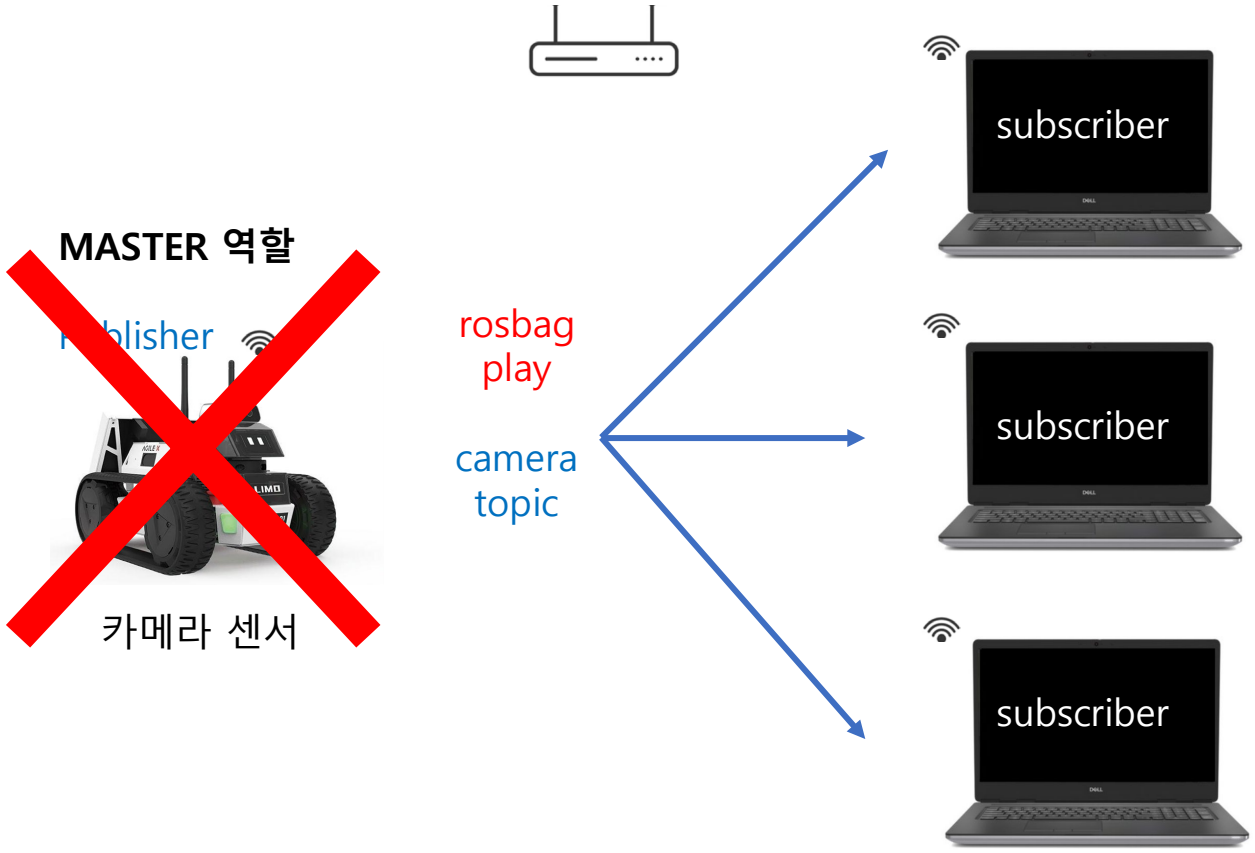
rosbag

1. rosbag을 통한 카메라 topic 저장

rosbag record

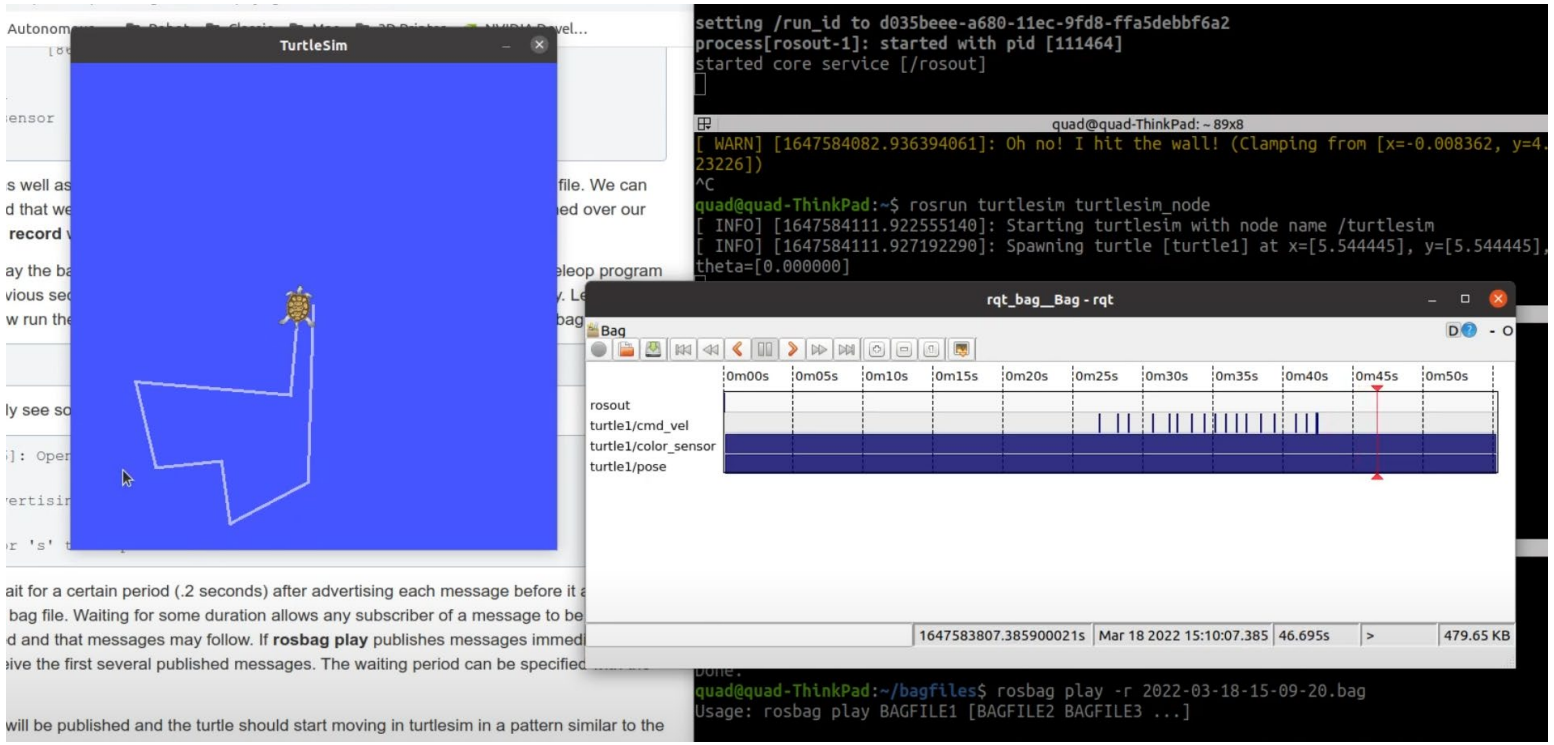


2. LIMO – 노트북 통신



rosbag

- rosbag
  - ROS 토픽을 저장하고 다시 재생할 수 있는 도구
  - 센서 등 하드웨어 없이 simulation 가능



rosbag

- rosbag 명령어
  - https://wiki.ros.org/rosbag/Commandline 참고

record
: Record a bag file with the contents of specified topics.

info
: Summarize the contents of a bag file.

play
: Play back the contents of one or more bag files.

check
: Determine whether a bag is playable in the current system, or if it can be migrated.

fix
: Repair the messages in a bag file so that it can be played in the current system.

filter
: Convert a bag file using Python expressions.

compress
: Compress one or more bag files.

decompress
: Decompress one or more bag files.

reindex
: Reindex one or more broken bag files.

rosbag

- rosbag record
  - https://wiki.ros.org/rosbag/Commandline 참고

`record <topic-names>`

Record a bag file with the contents of the specified topics.

```
$ rosbag record rosout tf cmd_vel
```

`-a, --all`

Record all topics.

```
$ rosbag record -a
```

rosbag

- rosbag info
  - https://wiki.ros.org/rosbag/Commandline 참고

`info <bag-files>`

Display a summary of the contents of the bag files.

```
$ rosbag info session*.bag
```

Example usage:

```
$ rosbag info foo.bag
path:        foo.bag
version:     2.0
duration:    1.2s
start:       Jun 17 2010 14:24:58.83 (1276809898.83)
end:         Jun 17 2010 14:25:00.01 (1276809900.01)
size:        14.2 KB
messages:    119
compression: none [1/1 chunks]
types:       geometry_msgs/Point [4a842b65f413084dc2b10fb484ea7f17]
topics:      /points   119 msgs @ 100.0 Hz : geometry_msgs/Point
```

rosbag

- rosbag play
  - https://wiki.ros.org/rosbag/Commandline 참고

`play <bag-files>`

Play back (publish) the contents of the given bags.

```
$ rosbag play recorded1.bag recorded2.bag
```

`--topics`

specify which topics to play back

```
$ rosbag play recorded1.bag --topics /topic1 /topic2 /topic3
```

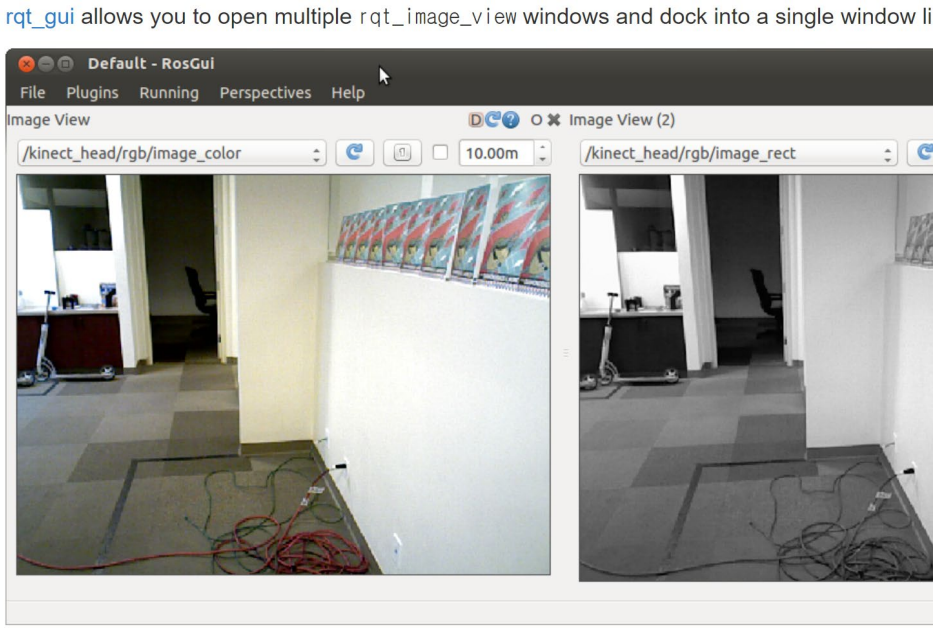
`-O NAME, --output-name=NAME`

Record to bag with name NAME.bag.

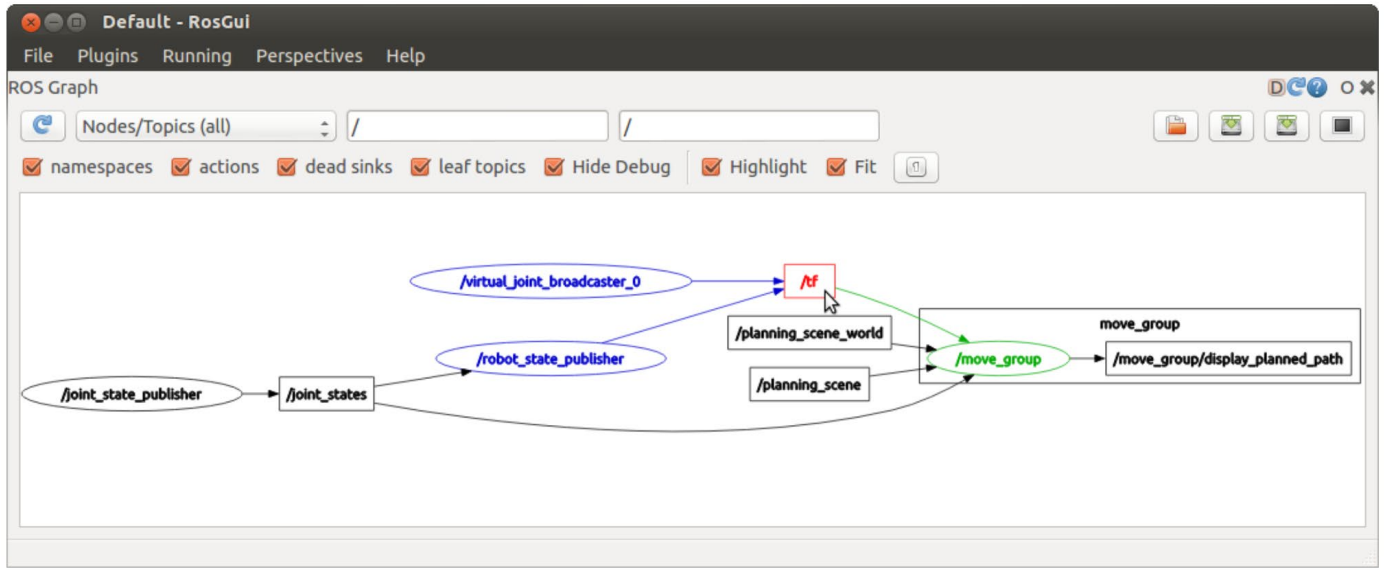
```
$ rosbag record -O session2_090210.bag /chatter
```

rosbag

- rqt_bag
  - https://wiki.ros.org/rqt_bag 참고
  - rqt : ROS GUI 개발 도구



rqt_image_view : 카메라 이미지 표시



Rqt_graph : 메시지 간의 상관 관계

rosbag

- rqt_bag
  - https://wiki.ros.org/rqt_bag 참고
  - rqt_bag : bag 파일 시각화 및 재생
  - To run

```
$ rqt
```

and select from `Plugins` --> `Logging` --> `Bag`.

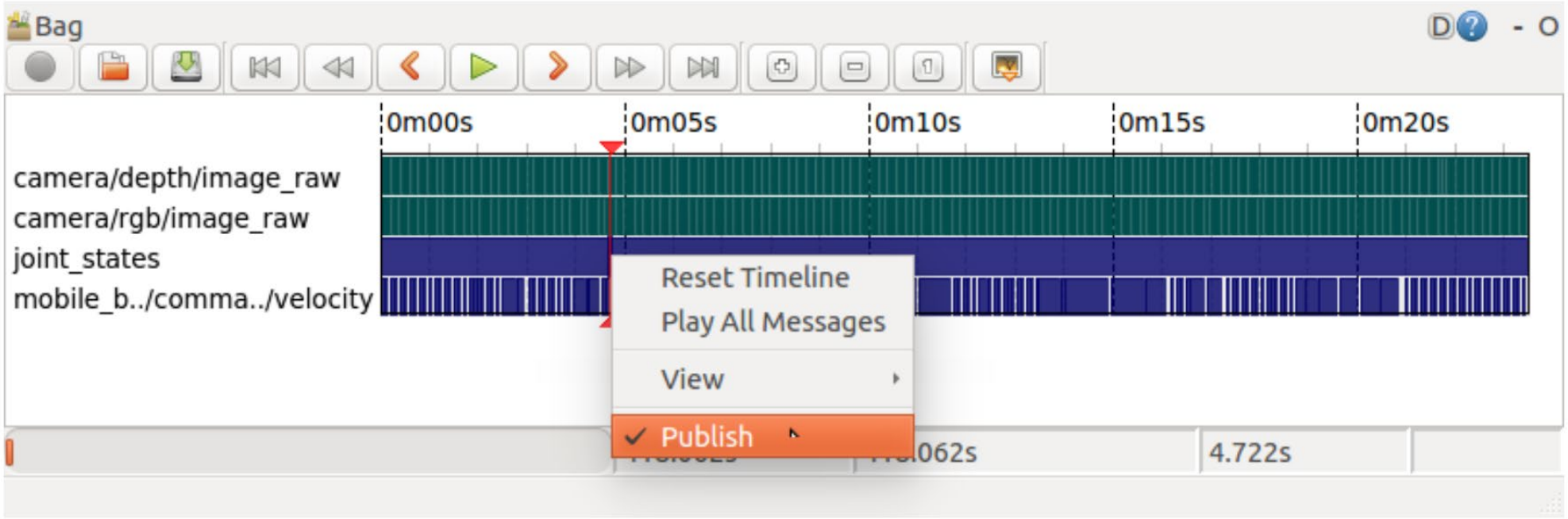
Or simply the following (with this you can't open `rqt_bag` with other rqt tools).

```
$ rqt_bag
```

The main window shows a timeline representing the stream of messages contained in the bag file, listed by topic.

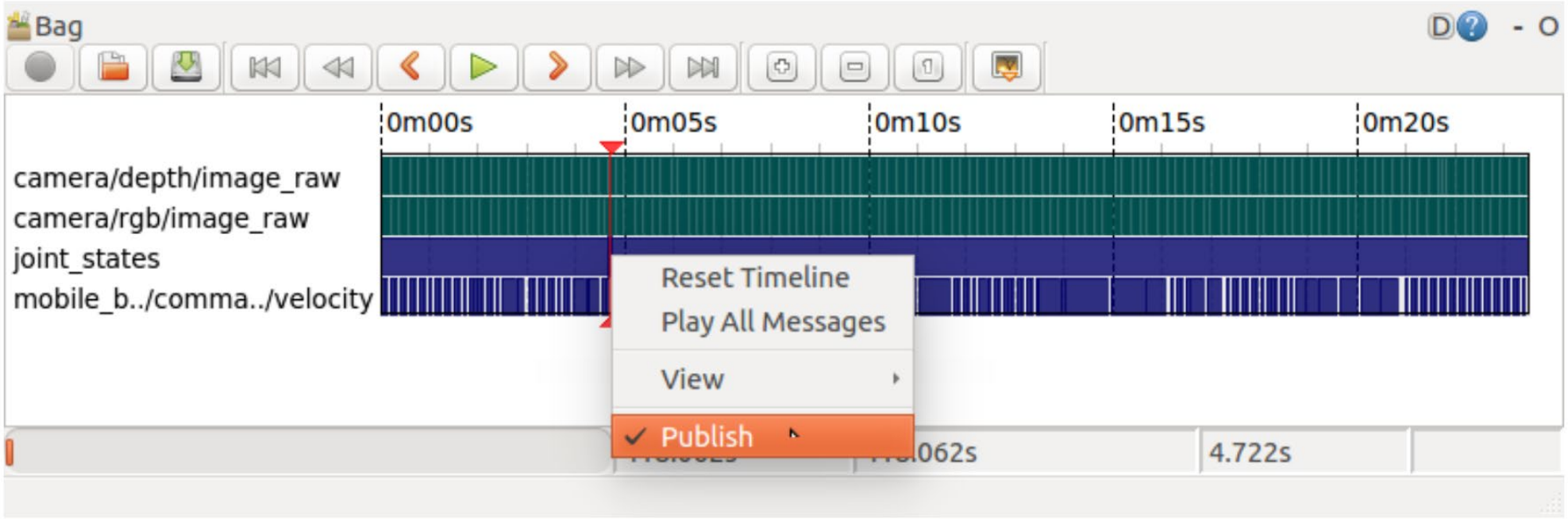
rosbag

- rqt_bag
  - https://wiki.ros.org/rqt_bag 참고
  - rqt_bag : bag 파일 시각화 및 재생
  - Publish ros topic



rosbag

- rqt_bag
  - https://wiki.ros.org/rqt_bag 참고
  - rqt_bag : bag 파일 시각화 및 재생
  - Publish ros topic



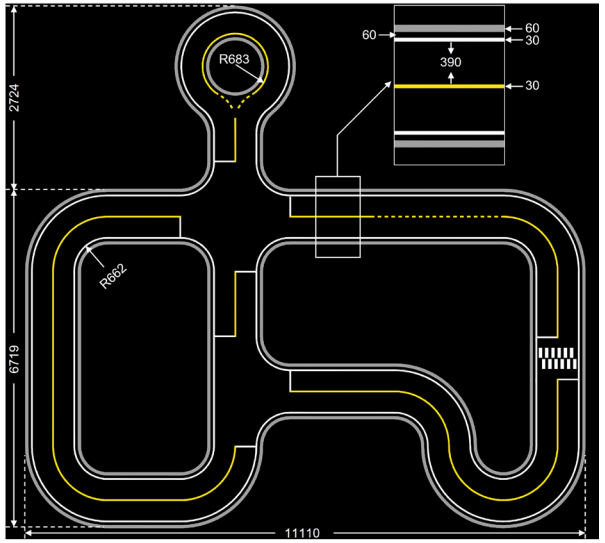
02

실습

실습

1. rosbag을 통한 카메라 topic 저장(LIMO)

rosbag record



-. Terminal(Terminator)

터미널 1 : $ roslaunch astra_camera dabai_u3.launch

터미널 2 : $ mkdir rosbag_file

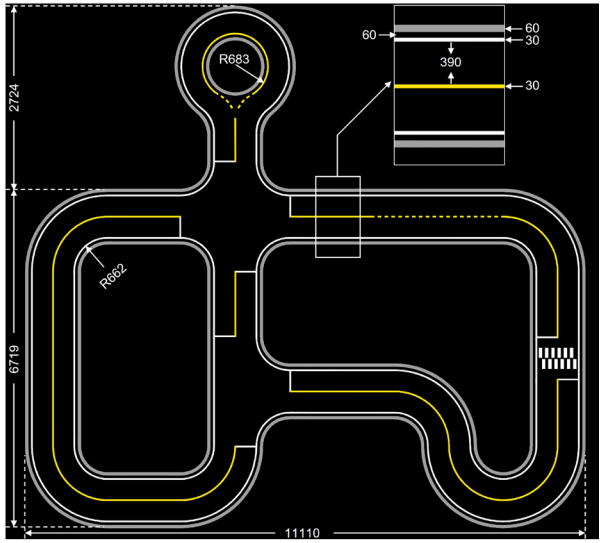
$ cd rosbag_file

$ rosbag record –O test.bag /camera/rgb/image_raw/compressed

실습

2. rosbag을 통한 카메라 topic 발행(노트북)

rosbag record



-. 파일 복사

-. Terminal(Terminator)

터미널 1 : $ roscore

터미널 2 : $ rosrun basic_ex lane_detect.py

* 리모와 통신할 필요가 없으므로 IP 설정을 변경해야 함

<bashrc 파일을 아래와 같이 수정>

$ export ROS_HOSTNAME=localhost

$ export ROS_MASTER_URI=http://localhost:11311