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Post meeting updates

Storyboard points for next week

- Finish unity to ROS2 pipeline (unless there's a versioning issue then it may take longer)
 - Ensure virtual topic publishing works (odom publishes in unity)
- URDF File I made this week see [here](#)
 - additionally made the specs sheet [here](#)
- Updated website links

Updated timeline

This is also reflected in the meeting 1 notes that was updated:

Second Update (clear roles per person)

Both team members will be working in tandem on the project, however, each will still have their own objectives to reach the end goal. If one team member lags behind, the other may step in to help and will be documented during weekly progress updates.

Arika

Focus on **implementation side** of things. Main point of divergence is during gui phase, however, both parts of the project will be closely linked throughout.

This includes the following:

- Managing the training environment in Unity
- Working bidirectional Unity <-> ros2 pipeline (using built in method) {may have to refactor for jazzy as repo is deprecated 2 versions back}
- Implement sign detection (yield/stop/u-turn) {stop sign then the rest if time permits} with YOLO
- simple gui for following:
 - manual turns (for intersection or lane)
 - (waypointing handled in rviz2)
 - object classifier (camera feed with classified image via YOLO) {IF TIME PERMITS}
 - camera feed
 - Current RL logic graph {IF TIME PERMITS}
- if time permits (in order of implementation)
 - Manual reward assignment via custom gui

- Generating digital twin during live run
- Augmented reality overlay, where virtual objects can be placed over the real camera vision. ()

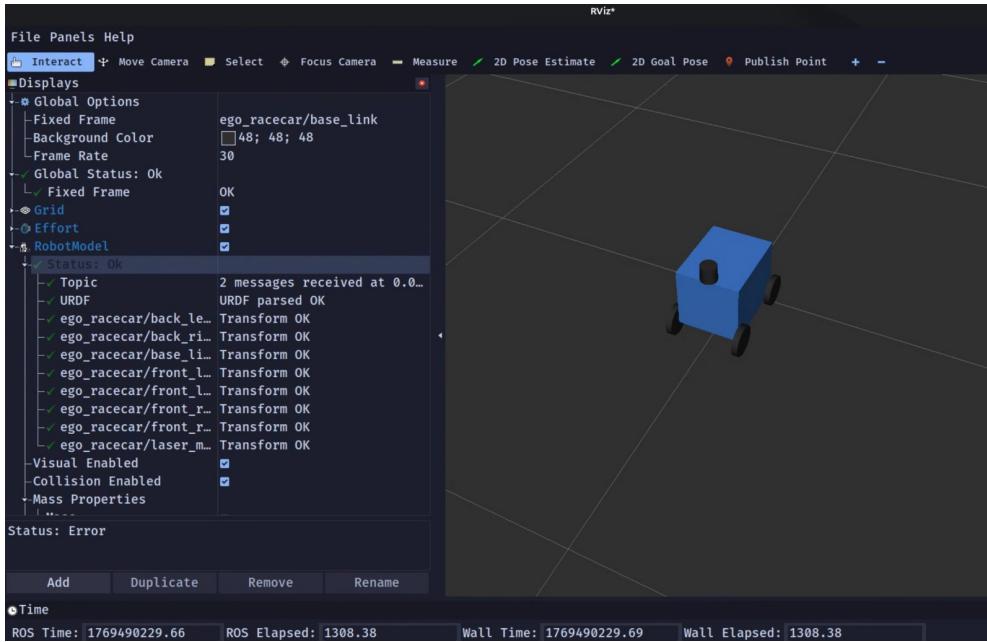
Aaron

Focus on generating and updating the policy as needed, looking at the more **theoretical side**. Includes:

- Generating policy to handle intersections
 - dependent on either waypoint placed or manual command given via gui
- dynamic object stop
- stop sign detection and stopping in policy (after detected and signal is sent to policy, how does the robot react)
- If time permits
 - pothole management (avoid if possible else try to avoid if can)

Storyboard points done this week

- **URDF Model created:** (See attached image). Comes with same dimensions as defined robot. Eventually would want to CAD a nicer model but currently just hoping to get project done asap.



- **GIT LFS:** Has been setup for our VSC. We chose instead of unity VSC due to pricing (free vs paid) and team colab.
- **ROS2 <-> Unity pipeline (PARTIALLY DONE):** I've got an idea of what I need to do. It uses a C# script to generate subscribers.
 - Much better than the original method of streaming individual messages over a socket. We can subscribe to a direct message not worrying about what to send them as and how to parse them.

Doing this for future proofing

- Will be done by end of week
- Just started to work on this given I need to have pub/sub nodes for both sim and real side

General project updates

- On my side for next month (Feb) I'm planning to look more into the training environment itself.
 - I want to try and implement all our features in it (generate a more accurate minicity like sim environment).
 - Reading the gen2sim and simworld paper, I want to look around to see what better stacks there are. Either generating something that is close to the minicity
 - Or could use Cesium with Unity with their pre-generated maps.
 - Dependent on how sim setup goes, start on generating sim training environment
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Timeline issues

- this month incomplete rl algo
- this month done unity
- Need more detail, make sure ! lose big picture
- Overlap btwn aaron work and ours. Need 2 see who does what. At some point converge. For now a bit confusing working on same thing or different?
- Not clear, write clearly your part of what u doing.
- Start big picture, show what aaron does, what u do. For my part, what I do.
- Digital twin?
 - Something team work? Then show that it is
 - Add digital twin to deliverable
 - Minimum thing you want to do, then the features that you can add
- This week is more just for what you've done and what the plan is until next week.
- What you've done in more detail (include code).

Make news page a split column if possible (for each month).

- Send out airo email to update project.

see also [Research project Sp 26 thoughts](#)