

Autonomy Software WG Meeting 2022/08/23 #2800

BonoloAWF started this conversation in **Working group meetings**



BonoloAWF on Aug 16, 2022

edited ▾

Administrative

- [Previous Meeting Minutes](#)

Common Resources

- Bus ODD [software architecture proposal](#)
- Bus ODD [architecture design discussions](#)
- Bus ODD [candidate simulator comparisons](#)
- Bus ODD [milestone development plan](#)
- Autoware [contributors list](#)

Announcements

Autoware.Universe

- ☒ Bus ODD [July-Aug Milestone](#)
- ☒ Bus ODD [Project Board](#)
- ☐ PRs [waiting for review](#)
- ☐ Bus ODD [high priority issues](#) not in the current milestone
- ☐ Autoware.Universe reported [bugs](#)
- ☐ Autoware [design discussions](#) and [demos](#)

Discussion topics

Evaluation of control modules

- [@brkay54](#) will present findings summarised in [Evaluate control modules in Universe](#) [autoware.universe#567](#)

Discussion summary:

- three scenarios tested were kashiwanoha map, gebze map (Lexus vehicle), gebze map (bus vehicle)
- kashiwanoha map - higher lateral error was observed, PP had better performance

Category



Working group meetings

Labels

meeting:software-wg

2 participants



- gebze map - MPC performance was better (vehicle can move at higher velocity implying a higher lookout distance resulting in higher errors in PP)
- Ryohsuke - how do we read the tables? How are the ave. accelerations useful? Berkay - averages don't have meaning, the lower lateral acceleration is a better metric. Ryohsuke - is the actual trajectory recorded? Berkay - no it's the vehicle position. You can visualise all the values in the graphs as well.
- Ryohsuke - are there instructions for reproducing the results? Berkay - yes there is a [README document](#). Ryohsuke - we probably need more detailed instructions. Can you create a "how to guide" in the Autoware docs. TierIV can add a section on how to tune the control params based on your evaluations. Berkay - I can write such a document. Ryohsuke - thanks, we can close this issue and create a new issue for the documentation.
- Bonolo - what is your conclusion on which controller is preferred (PP or MPC)? Ryohsuke - in theory a well tuned MPC controller should have better error in general so we should check why it has more error in the kashiwanoha map. We can still include both packages in Autoware.
- Hatem - were the parameters defaults or tuned? Berkay - default params were used for all the scenarios. I think they are tuned for Lexus vehicle. Mehmet - did you test the ISUZU (bus) vehicle? Berkay - yes but default params for MPC were used for the bus. Mehmet - Test 3 is probably not valid then since the paramters of the Lexus were used for the bus. Berkay - we definitely need to tune the params for the bus to get better performance.

Mapping WG proposal

- [@armaganarsln](#) will present a proposal for establishing a new WG

Presentation summary:

- TSC is considering a proposal to create an Autoware Foundation Mapping WG
- Topics to cover include sensor calibration, HD maps, mapping pipelines, dynamic loading and streaming etc.
- We are looking for WG leader volunteers and for participants to join
- Suggestions are welcome (contact [@armaganarsln](#) if you would like to join or add suggestions to the proposal)

Ryohsuke - this can be reviewed at the next TSC call and, if approved, the WG will be formally established.

Bus ODD scenarios

- [@MertClk](#) will present some scenarios related to the bus ODD

Discussion summary:

- See slides (in comments) for the proposed timeline and scenarios
- Additional scenarios proposed:
 - crosswalk scenario (ego vehicle yields to pedestrians)

- parked vehicle on road (ego vehicle changes lanes)
- stop line (ego vehicle must yield to other vehicles)
- approaching bus stop (ego vehicle makes precise stop at bus stop)

Ryohsuke - the plan is OK.

David - are you using RTK GPS? Mert - we are and can get 1cm accuracy but our campus is full of trees. For bus stops the 30cm value defined in the ODD WG is reasonable. Ryohsuke - you can use a vertical stop line just before the speed bump and slow down.

Bus ODD progress updates:

ITRI bus integration update (In meetings with 7am UTC time slot)

-







LeoDrive bus integration update







- Planning module cannot define a goal point behind, if the point is in the same lane
 - This is a known limitation of current planner
 - This is not a high priority issue, but we can still add it as a future feature request
- Obstacle avoidance planner uses only `vehicle_width/2`, but ISUZU bus has asymmetrical footprint. LeoDrive to create a new issue on this.
- Behaviour planner shifting point calculation has a bug - Mehmet will create an issue to discuss
- PP does not consider the maximum steering value (a value larger than the capability of the bus was calculated). A PR was created to fix this.

Action Items

Review of Issues and Discussions

The following Discussions and Issues were highlighted:

-  [tensorrt_yolo sample yolov5 model throw error on inference](#) [autoware.universe#1647](#) - conversion should be automatic, more tests needed
-  [surround obstacle checker rarely dies in local environment with segmentation fault](#) [autoware.universe#1231](#) - on hold, error was not reproduced
-  [Run Lidar Centerpoint with TVM](#) [autoware.universe#908](#) - set up a call to discuss a way forward
-  [Add TVM inference capability](#) [autoware.universe#628](#) - set up a call to discuss a way forward
-  [Create speed_bump behavior module](#) [autoware.universe#611](#) - ongoing
-  [Implement sensor drivers for ROS 2](#) [autoware.universe#551](#) - GNSS INS driver missing

-  [Sometimes the sensing module doesn't publish concatenated pointcloud](#) [autoware.universe#1009](#) - same error was observed by multiple engineers
-  [Ground segmentation fails for points behind the low objects](#) [autoware.universe#669](#) - PR in progress
-  [Some .md files have preview problems](#) [autoware.universe#1568](#) - low priority
-  [Yaw calculation is unstable in obstacle_avoidance_planner when skipping optimization.](#) [autoware.universe#966](#) - increasing distance between poses does not solve the problem
-  [Adding NDT reinitialization statement and reinitialization while moving](#) [autoware.universe#1375](#) - adding deviation could help warn safety driver
-  [\[proposal\] A new pointcloud map interface for dynamic map loading](#) [#2812](#) - proposal to cover larger areas for mapping

↑ 1

1 comment

Oldest

Newest

Top



MertClk on Aug 23, 2022

Collaborator

Leo Drive Bus ODD Update: [Presentation](#)

↑ 1

0 replies