

maneuver-genom3 - Bug #285

publish trajectory over a receding horizon

2020-11-16 17:15 - Martin Jacquet

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|---|--------|
| Status: | Closed |
| Priority: | Normal |
| Assignee: | |
| Category: | |
| Target version: | |
| Description | |
| <p>I added in maneuver the possibility to publish the trajectory over a receding horizon (sliding window) instead of only the next desired point.</p> <p>You can find the code on redmine : https://redmine.laas.fr/projects/perceptive-nmpc/repository/maneuver-genom3</p> <p>Basically: The new port 'horizon' publishes a sequence of rigid_body::state, which size is defined in a service 'set_horizon' called with a time horizon T and a number of samples N. The port is not published while set_horizon isn't called. An IDS field 'sampling' (jump between each elements of the trajectory to publish) is used in mv_exec_path to fill the port sequence. The last point is repeated to fill the sequence at the end of the trajectory.</p> <p>I am not sure how to extend this to the 'velocity control mode' of maneuver since I didn't understood all the code of it so far.</p> <p>Does it makes sense to include this feature in the openrobots version of maneuver?</p> | |

History

#1 - 2020-11-16 17:44 - Anthony Mallet

On Monday 16 Nov 2020, at 17:15, Martin Jacquet wrote:

I am not sure how to extend this to the 'velocity control mode' of maneuver since I didn't understood all the code of it so far.

This is basically the same, except that the planner plans for the velocity instead of the position (and the planner is 'fooled' by passing it the velocity as the position, the acceleration as the velocity, etc.).

Does it makes sense to include this feature in the openrobots version of maneuver?

Sure, it makes sense (and otherwise the components would diverge).
I can have a look to merge it, but not right right now.

#2 - 2021-01-07 16:07 - Anthony Mallet

- Status changed from New to Feedback

I merged your code, together with a few fixes.

BTW, it was working for the velocity planner, but was just not implemented for the integrator that handles the case where the current reference has non-zero velocity. I fixed that as well.

If you test it and it works for you, I can make a new release soon.

#3 - 2021-01-08 19:38 - Martin Jacquet

Thanks! I did a few tests and couldn't find any issue with the MPC so far.

On 07/01/2021 16:07, Anthony Mallet wrote:

Issue #285 <<https://git.openrobots.org/issues/285#change-730>> has been updated by Anthony Mallet.

- **Status** changed from /New/ to /Feedback/

I merged your code, together with a few fixes.

BTW, it was working for the velocity planner, but was just not implemented for the integrator that handles the case where the current reference has non-zero velocity. I fixed that as well.

If you test it and it works for you, I can make a new release soon.

Bug #285: publish trajectory over a receding horizon
<<https://git.openrobots.org/issues/285#change-730>>

- *Author: *Martin Jacquet
- *Status: *Feedback
- *Priority: *Normal

I added in maneuver the possibility to publish the trajectory over a receding horizon (sliding window) instead of only the next desired point.

You can find the code on redmine :

<https://redmine.laas.fr/projects/perceptive-nmpc/repository/maneuver-genom3>

Basically:

The new port 'horizon' publishes a sequence of rigid_body::state, which size is defined in a service 'set_horizon' called with a time horizon T and a number of samples N. The port is not published while set_horizon isn't called.

An IDS field 'sampling' (jump between each elements of the trajectory to publish) is used in mv_exec_path to fill the port sequence. The last point is repeated to fill the sequence at the end of the trajectory.

I am not sure how to extend this to the 'velocity control mode' of maneuver since I didn't understand all the code of it so far.

Does it makes sense to include this feature in the openrobots version of maneuver?

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#4 - 2021-01-11 17:30 - Anthony Mallet

- Status changed from Feedback to Closed

I released 2.1 with the new functionality.

Thanks for the patch & testing!