

Why are there some duplicated parameter files? #2575

✓ Answered by **takayuki5168** kminoda asked this question in Q&A



kminoda on May 2, 2022 Collaborator

Why are there duplicated parameter files in Autoware?

For example, parameters for planning module seems to exist both in `src/universe/autoware.universe/planning/PATH_TO_PACKAGE/config` and `src/universe/autoware.universe/launch/tier4_planning_launch/config`.

Moreover, for example, this is *partially* true for the perception module. Some parameters are duplicated while others are not.

IMHO this is very confusing since it is not obvious which parameters we should change.

May I ask why some of these parameter files are duplicated?
Also, I would like to know the reason why each parameter file are stored in the current directory.

Thank you in advance!

↑ 1

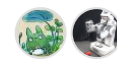
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✓ Answered by **takayuki5168** on May 2, 2022

Currently, each planning package and tier4_planning_launch have almost the same yaml file.

In the near future, with the following PRs, we will have two kinds of parameters as follows.

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takayuki5168 on May 2, 2022 Collaborator

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Currently, each planning package and tier4_planning_launch have almost the same yaml file.

In the near future, with the following PRs, we will have two kinds of parameters as follows.

- i. `autoware.universe/planning/PATH_TO_PACKAGE/config`

- ii. same parameters in autoware_launch or autoware_individual_params.

[autowarefoundation/autoware.universe#771](#) (autoware.universe)
[autowarefoundation/autoware_launch#38](#) (autoware_launch)
[autowarefoundation/autoware_individual_params#25](#)
(autoware_individual_params)

In my understanding, the reason having two duplicated parameters is,

- Regarding the first parameter, Autoware's packages are modularized enough and each package can be launched with other software. (e.g. Other company developing mobile robots may use the path planning package in Autoware since its algorithm is awesome.)
 - Therefore we put the reference parameter in `autoware.universe/planning/PATH_TO_PACKAGE/config`.
- Regarding the second parameter, When launching Autoware from autoware_launch, since each vehicle will have different parameters, autoware_launch or autoware_individual_params have these kinds of parameters.
 - e.g. Common parameters for a xx company's bus will be in autoware_launch, and individual parameters for each bus (control parameters are tuned to each vehicle) will be in autoware_individual_params.



Marked as answer



2



1

4 replies



kminoda on May 2, 2022

Collaborator

Author

@takayuki5168

Thanks for the detailed answer!

I get the first point,

Regarding the first parameter, Autoware's packages are modularized enough and each package can be launched with other software. (e.g. Other company developing mobile robots may use the path planning package in Autoware since its algorithm is awesome.)

and I think I also get that autoware_individual_params is better to be individually stored, but I couldn't get why autoware_launch should also have duplicated parameter files.

Regarding the second parameter, When launching Autoware from autoware_launch, since each vehicle will have different parameters, autoware_launch or autoware_individual_params have these kinds of parameters.

Speaking of the xx company's bus example, why not just have one set of parameter files in each package (as in pattern i) and tune the parameters to their bus application?



takayuki5168 on May 2, 2022

Collaborator

edited ▼

and I think I also get that `autoware_individual_params` is better to be individually stored, but I couldn't get why `autoware_launch` should also have duplicated parameter files.

Let's say we will hold a bus project with 1000 same buses. Most planning parameters (e.g. `max_velocity`, `acceleration`, `jerk`, `distance_to_obstacle_when_stopping`, ...) are designed for safety and efficiency for the project and used commonly by all 1000 buses. These common parameters will be in `autoware_launch` where yaml files are shared among all buses.

Some of control parameters (e.g. pid gains for velocity controller) have to be tuned to each bus. These individual parameters will be in `autoware_individual_params` where each bus has its own yaml files.

Speaking of the xx company's bus example, why not just have one set of parameter files in each package (as in pattern i) and tune the parameters to their bus application?

This is because each bus has its own hardware parameters (e.g. frictional coefficient, ...). Therefore, each vehicle has to have its own control parameters (e.g. pid gains for velocity controller).

I hope this will make sense to you :)



kminoda on May 2, 2022 Collaborator Author

I think I got the point. Thanks for the discussion!



takayuki5168 on May 15, 2022 Collaborator

@kminoda If this makes sense, please make this discussion unanswered.



1

Answer selected by **kminoda**