```
{"x": 0.0,
 "y": 0.0,
 "z": 0.0}}
```

Parameter definitions

Waypoints

Waypoints: They refer to the GPS coordinates that establish the path for the vehicle's movement. The path defined in this manner is divided into segments consisting of coordinates known as basepoints.

step_xy: It defines the distance between the consecutive basepoints on the path connected by the waypoints. This controls how many basepoints will be created given a set of waypoints. The units used here are in meters (m).

no_move_distance: It defines the maximum distance of the starting position of the vehicle from the first waypoint within which the vehicle will begin moving. If the distance to the vehicle is greater than the no_move_distance, then the vehicle will not move. Once the vehicle is within the no_move_distance, then it will move by following the basing points until it reaches the crawl_distance. The units used here is meters (m).

crawl_distance: It defines the distance within which the vehicle will move directly to the waypoint without following any basepoints (if any) within this distance. So, once the vehicle is within the crawl_distance then it will directly move to the waypoint until it reaches the **proxy_radi**. The units used here is in meters (m).

proxy_radi: It defines the distance within which the vehicle will stop following the current waypoint and start following the nearest basepoint between the current and the next waypoint. It also updates the current waypoint to the next waypoint. It will then continue to move towards the nearest basing point till it reaches the **basing_proxy_radi**. The units used here is in meters (m).

basing_proxy_radi: It defines the distance within which the vehicle stops following the current basepoint and updates the current basepoint as the next nearest basepoint and starts following it until it reaches the **basing_proxy_radi** of the next basepoint. The process continues until it reaches the **proxy_radi** of the next waypoint where it changes its course accordingly. The units used here is in meters (m).

Control (Vamana):

steering_max: This is the absolute maximum value of the steering that the CAN bus can take, signifying the maximum turn rate of the vehicle in either direction. This parameter takes a hard-coded value of 127 and should NOT be changed until unless changed in the VCU.

throttle_max: This is the absolute maximum value of the throttle that the CAN bus can take, signifying the maximum speed of the vehicle in the direction of the vehicle·s heading. This parameter takes a hard-coded value of 127 and should NOT be changed until unless changed in the VCU.

throttle_turn_sensitivity: It defines the sensitivity of the throttle values while the vehicle takes a turn. The input values range from [0,1]. The expected value of this argument is always much less than 1 because this slows down the vehicle at the turn.

steering_turn_sensitivity: It defines the sensitivity of the steering values while the vehicle takes a turn. The input values range from [0,1]. The expected value of this argument is always close to 1. Since the vehicle slows down due to the parameter **throttle_turn_sensitivity**, we need to have the steering values as close to the **steering_max** as possible to prevent any path deviations in the vehicle at sharper turns.

steering_sensitivity: It defines the sensitivity of the steering values while the vehicle is following the path between the waypoints and has not yet reached any turns. The input values range from [0,1]. The expected value of this argument is always much less than 1 to prevent any wobble in the vehicle path.

throttle_sensitivity: It defines the sensitivity of the throttle values while the vehicle is following the path between