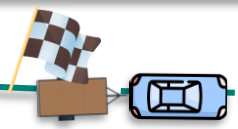
TrailerMate

Team Jason

Abdessamad Amadar
Malaurie Bernard
Sarah Bobillot
Emilie Fraumar
Killian Gonet
Réda Kharoubi
Antonin Laborde-Tastet

3,2,1…GO!

Raymond



Step 1:

Step 2:

Step 3:

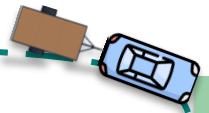
Step 4: Wheel improvement

Step 5:

Step 6:

3,2,1…GO!

Raymond



Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

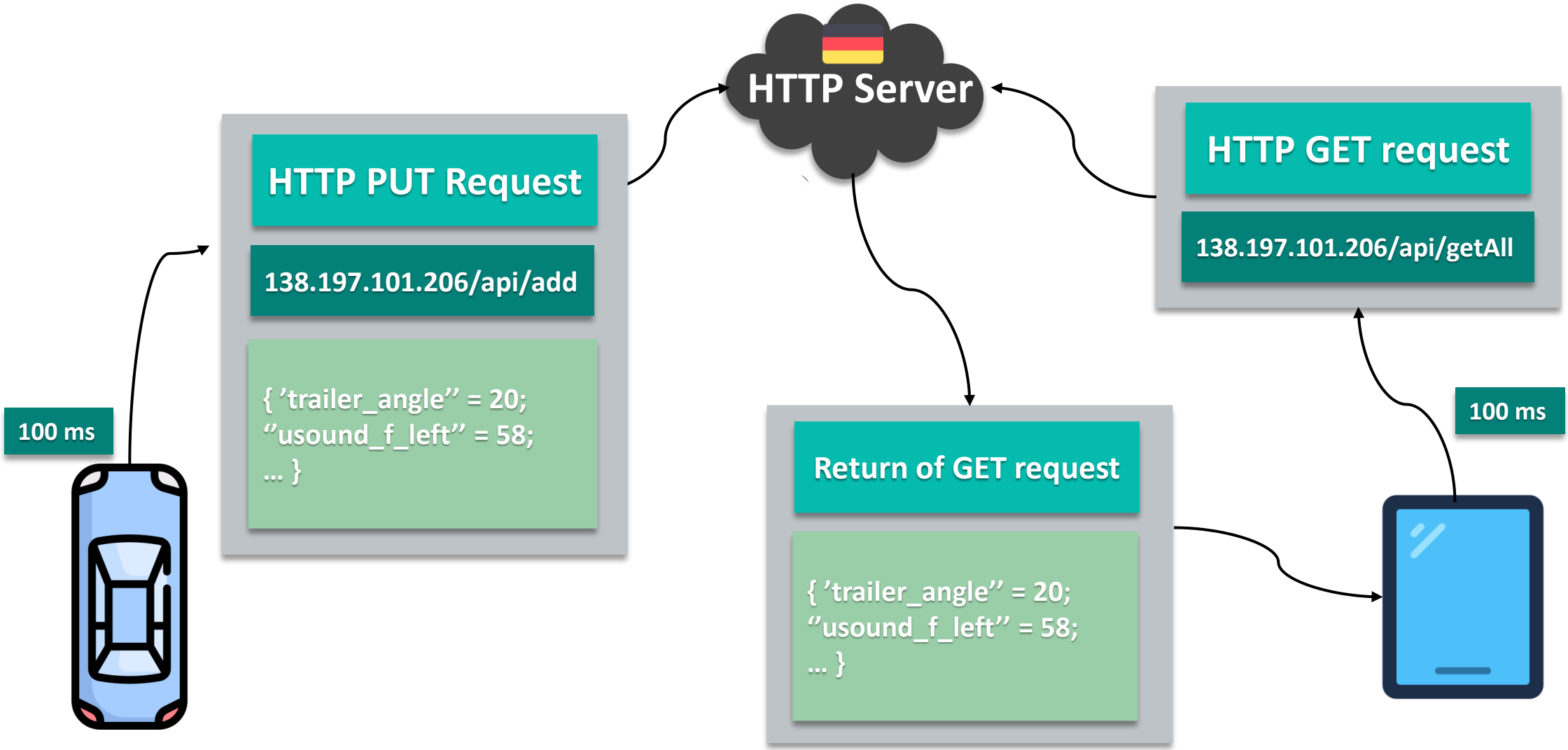
Step 2:

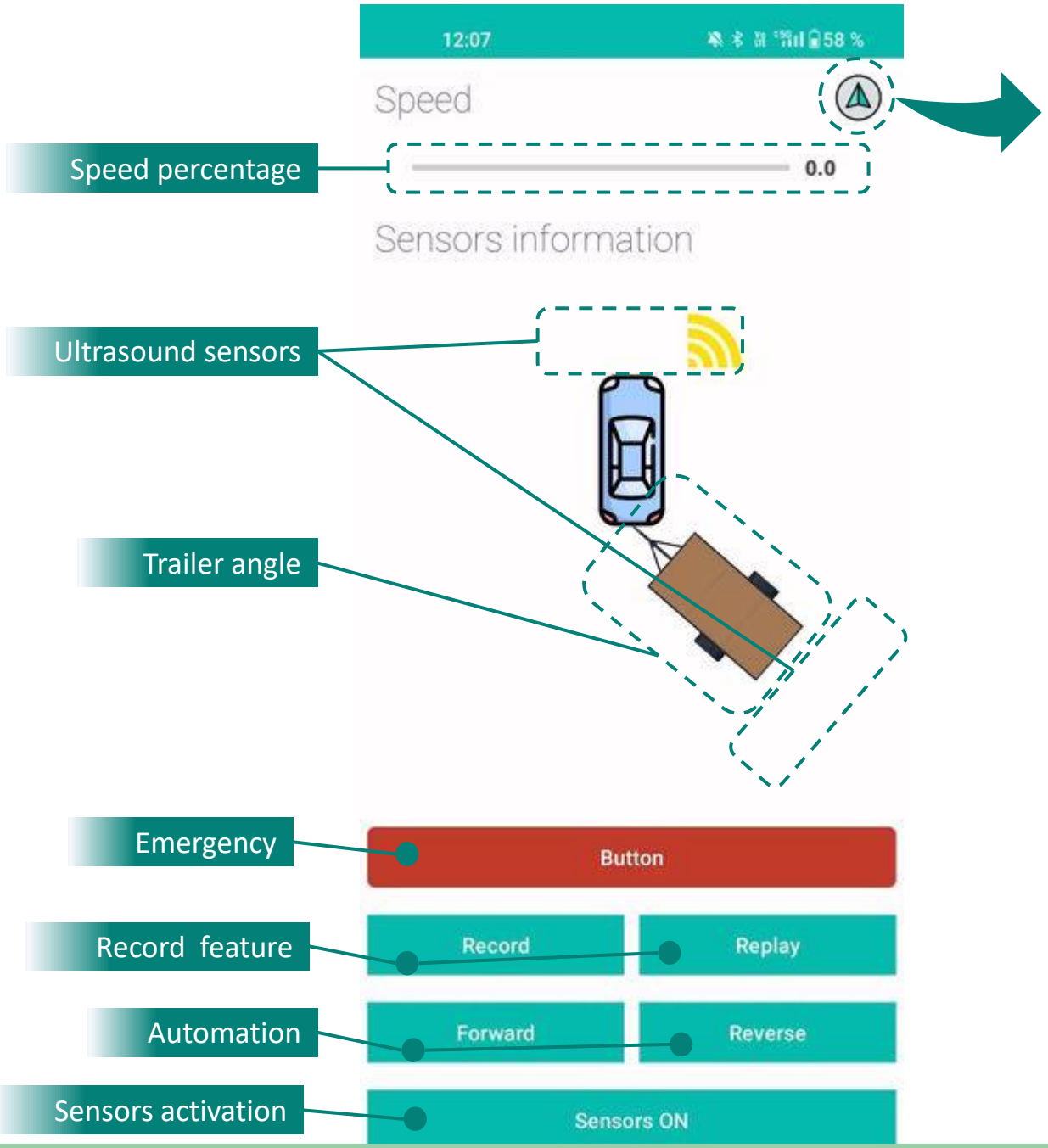
Step 3:

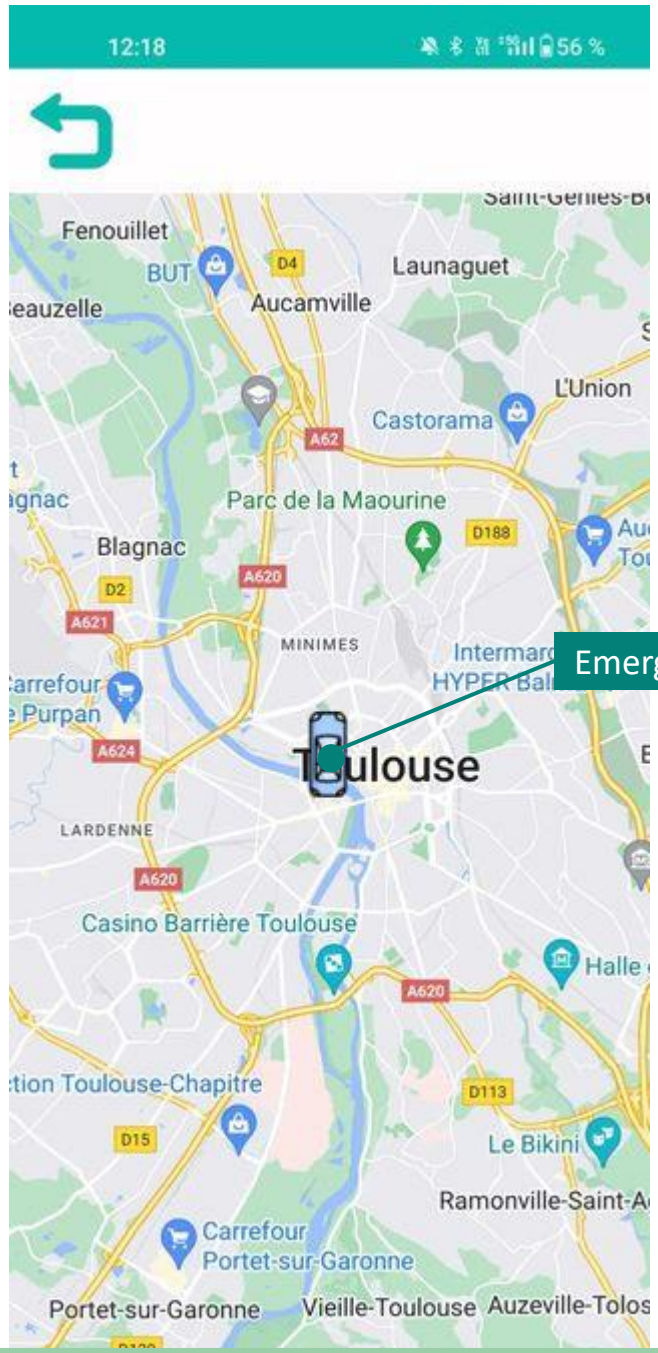
Step 4: Wheel improvement

Step 5:

Step 6:


HTTP Server
HTTP PUT Request
138.197.101.206/api/add
{ ’trailer_angle” = 20;
“usound_f_left” = 58;
… }
100 ms
HTTP GET request
138.197.101.206/api/getAll
100 ms
Return of GET request
{ ’trailer_angle” = 20;
“usound_f_left” = 58;
… }


12:07
58 %
Speed
0.0
Sensors information
Speed percentage
Ultrasound sensors
Trailer angle
Emergency
Button
Record feature
Record
Replay
Automation
Forward
Reverse
Sensors activation
Sensors ON


12:18
56 %
Fenouillet
BUT
Aucamville
Launaguet
L'Union
Castorama
Parc de la Maourine
Blagnac
MINIMES
Emergency
Toulouse
LARDENNE
Casino Barrière Toulouse
Le Bikini
Carrefour Portet-sur-Garonne
Portet-sur-Garonne
Vieille-Toulouse
Auzeville-Tolos

3,2,1…GO!

Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2:

Step 3:

Step 4: Wheel improvement

Step 5:

Step 6:

3,2,1…GO!

Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2: Obstacle detection

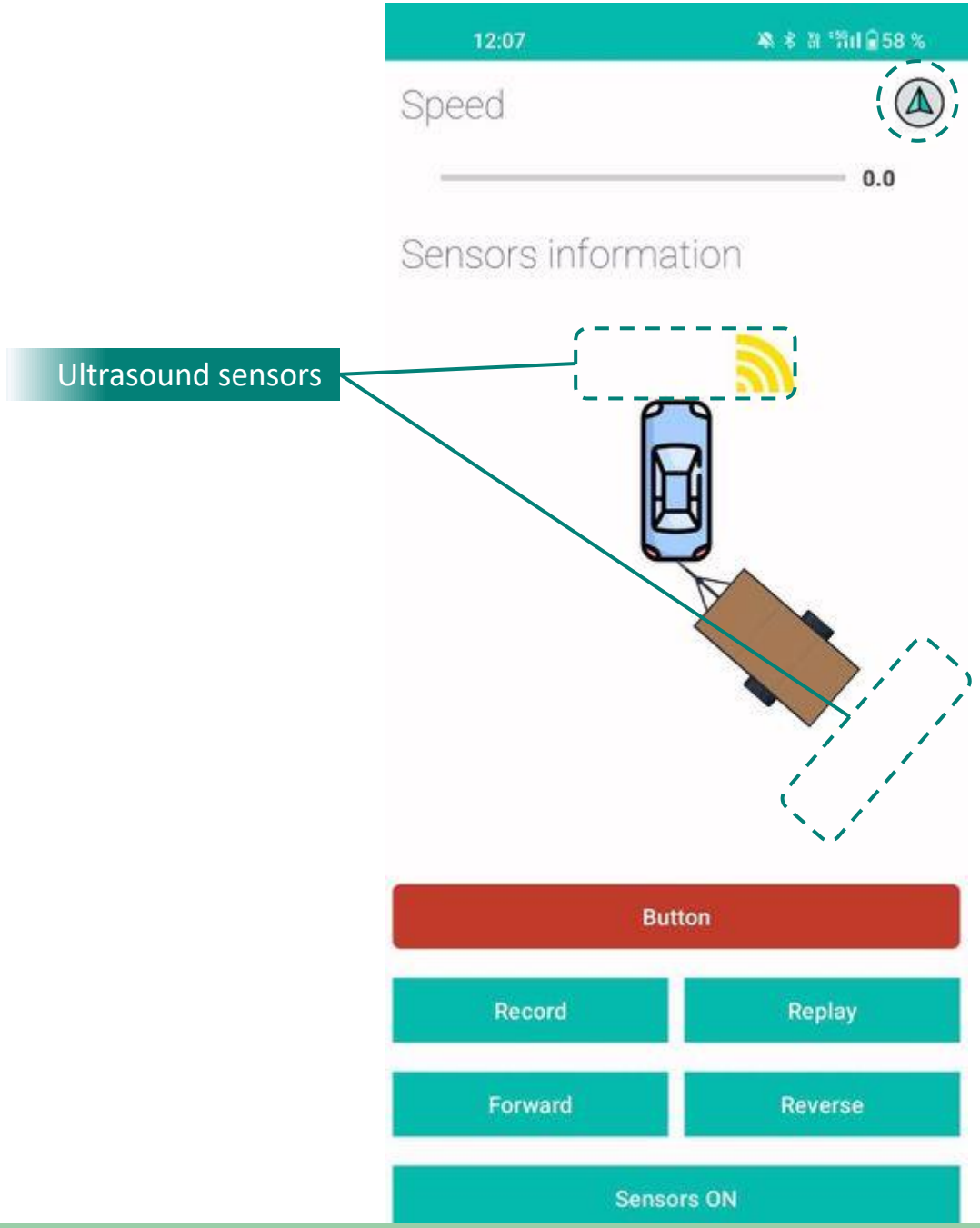
With the **ultrasound sensors**, the trailer stops 20 cm before hitting an obstacle.

Step 3:

Step 4:

Step 5:

Step 6:


12:07
58 %
Speed
0.0
Sensors information
Ultrasound sensors
Button
Record
Replay
Forward
Reverse
Sensors ON

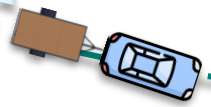
3,2,1…GO!

Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2: Obstacle detection



With the **ultrasound sensors**, the trailer stops 20 cm before hitting an obstacle.

Step 3:

Step 4:

Step 5:

Step 6:

3,2,1…GO!

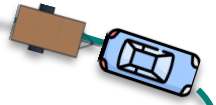
Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2: Obstacle detection

With the **ultrasound sensors**, the trailer stops 20 cm before hitting an obstacle.



Step 3: Autonomous forward and backward movement

A control loop implementation allows to move forward or backward at a desired speed despite of perturbations.

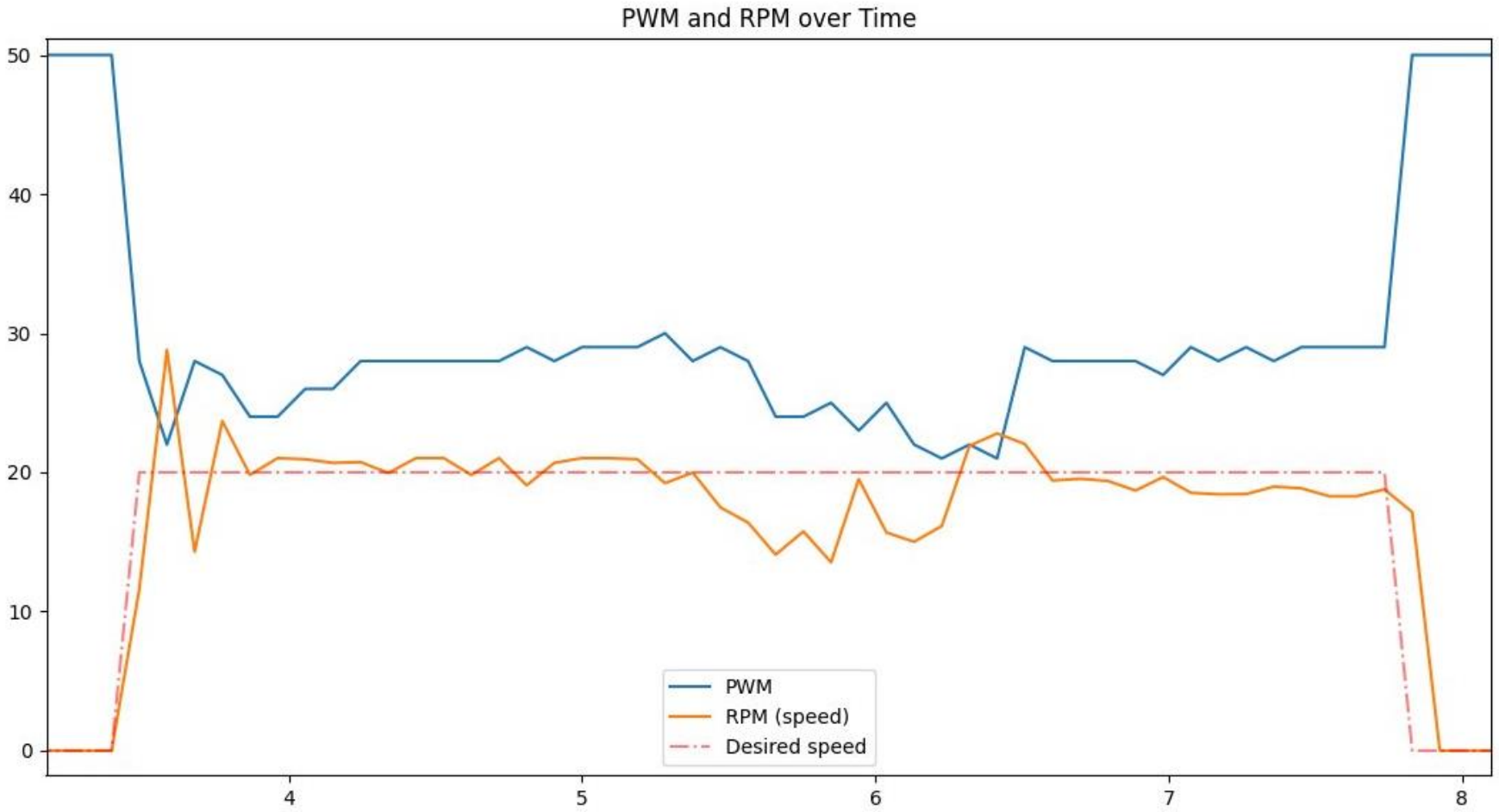
Figure 1

Step 4:

Step 5:

Step 6:

(1) Control loop of the backward motion



3,2,1…GO!

Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2: Obstacle detection

With the **ultrasound sensors**, the trailer stops 20 cm before hitting an obstacle.

Step 3: Autonomous forward and backward movement

A control loop implementation allows to move forward or backward at a desired speed despite of perturbations.

Figure 1

Step 4:

Step 5:

Step 6:

3,2,1…GO!

Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2: Obstacle detection

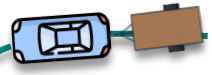
With the **ultrasound sensors**, the trailer stops 20 cm before hitting an obstacle.

Step 3: Autonomous forward and backward movement

A control loop implementation allows to move forward or backward at a desired speed despite of perturbations.

Figure 1

Step 4: Wheel improvement



Wheels' adherence and steering control loop are improved.

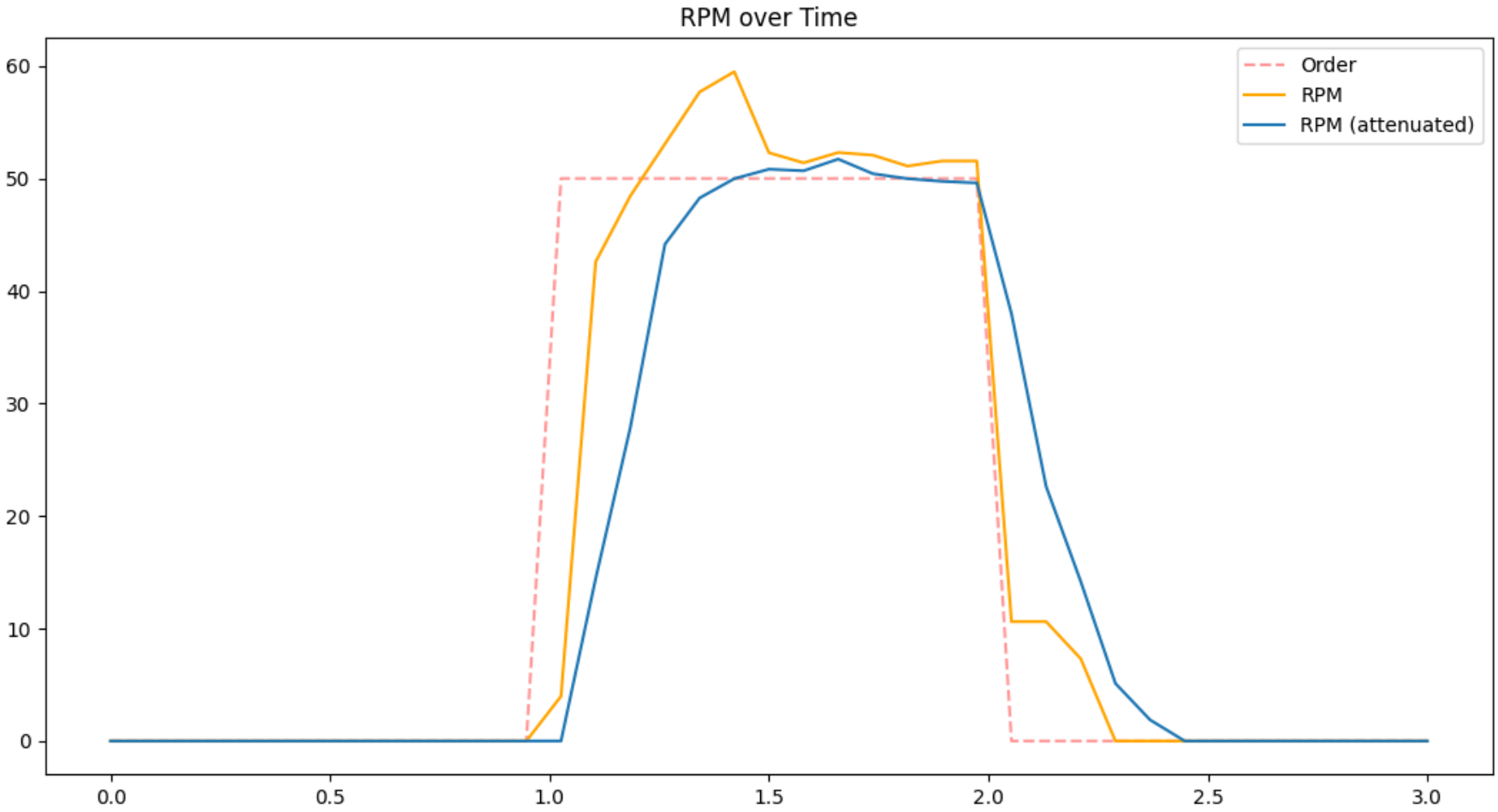
Figure 2

Step 5:

Step 6:


00:02,67
New behavior

(2) Correction of the wheels grip



3,2,1…GO!

Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2: Obstacle detection

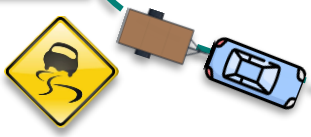
With the **ultrasound sensors**, the trailer stops 20 cm before hitting an obstacle.

Step 3: Autonomous forward and backward movement

A control loop implementation allows to move forward or backward at a desired speed despite of perturbations.

Figure 1

Step 4: Wheel improvement



Wheels' adherence and steering control loop are improved.

Figure 2

Step 5:

Step 6:

3,2,1…GO!

Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2: Obstacle detection

With the **ultrasound sensors**, the trailer stops 20 cm before hitting an obstacle.

Step 3: Autonomous forward and backward movement

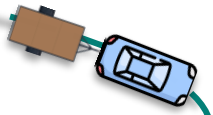
A control loop implementation allows to move forward or backward at a desired speed despite of perturbations.

Figure 1

Step 4: Wheel improvement

Wheels' adherence and steering control loop are improved.

Figure 2



Step 5: Reverse straight line

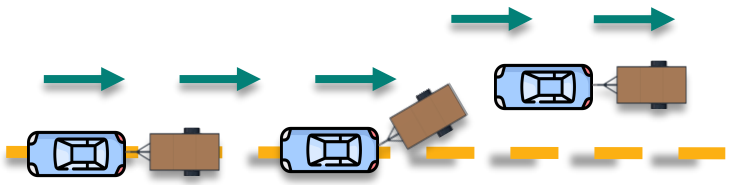
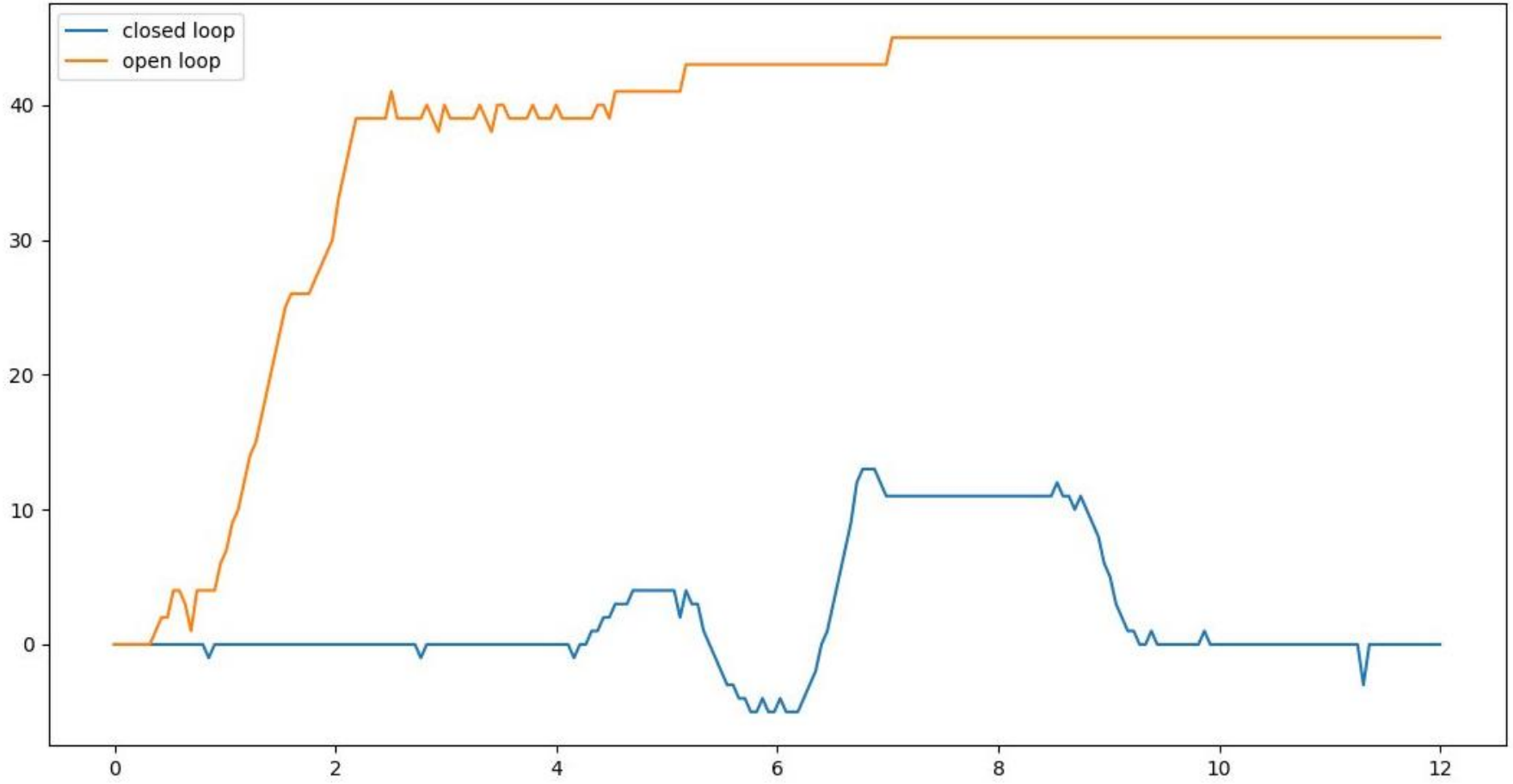


Figure 3

Step 6:

(3) Open and closed loop straight line



3,2,1…GO!

Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2: Obstacle detection

With the **ultrasound sensors**, the trailer stops 20 cm before hitting an obstacle.

Step 3: Autonomous forward and backward movement

A control loop implementation allows to move forward or backward at a desired speed despite of perturbations.

Figure 1

Step 4: Wheel improvement

Wheels' adherence and steering control loop are improved.

Figure 2

Step 5: Reverse straight line

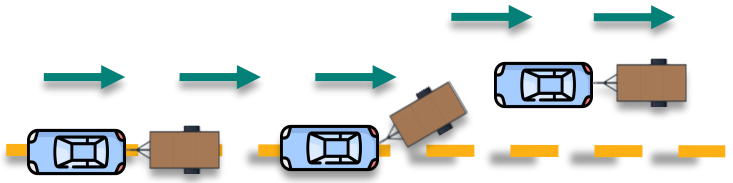
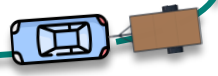


Figure 3

Step 6:



3,2,1…GO!

Raymond

Step 1: Android application

You can see the state of the different sensors via the **Android application.** You also can communicate with the car by clicking on the button.

Step 2: Obstacle detection

With the **ultrasound sensors**, the trailer stops 20 cm before hitting an obstacle.

Step 3: Autonomous forward and backward movement

A control loop implementation allows to move forward or backward at a desired speed despite of perturbations.

Figure 1

Step 4: Wheel improvement

Wheels' adherence and steering control loop are improved.

Figure 2

Step 5: Reverse straight line

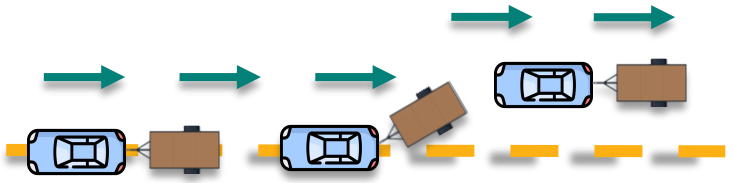
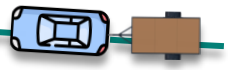


Figure 3

Step 6: Record and replay



An open loop sequence of movements is **recorded and stored**. It can then be replayed at any time.