



TrailerMate

Team Jason

Abdessamad Amadar

Malaurie Bernard

Sarah Bobillot

Emilie Fraumar

Killian Gonet

Réda Kharoubi

Antonin Laborde-Tastet



Reminder of the project



Schedule control & organization



Demonstrations



Next sprint goals



Next sprint organisation

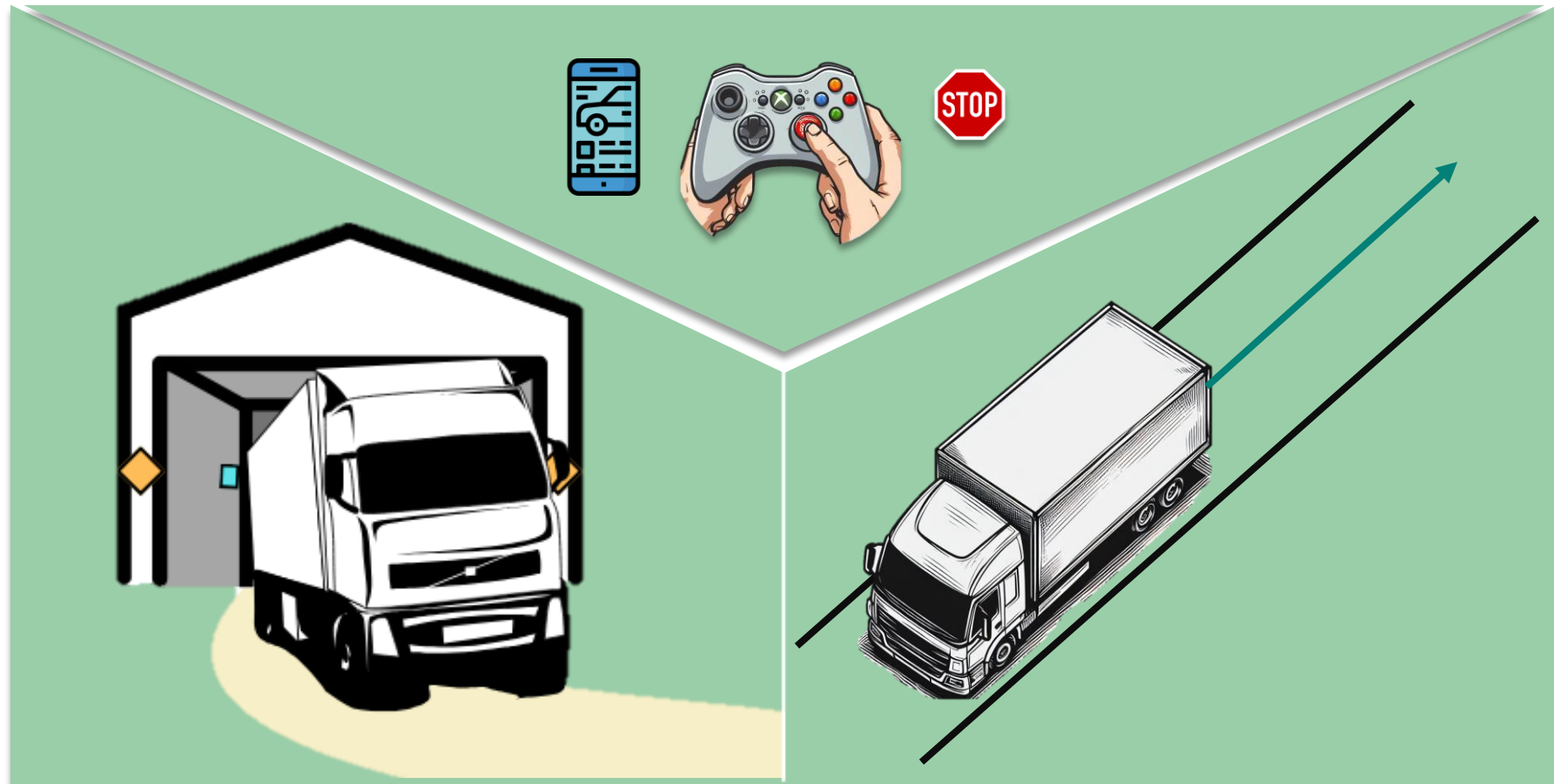


Next sprint acceptance tests



Suggestions & Questions ?

Reverse gear library





SCRUM Master : Sarah Bobillot

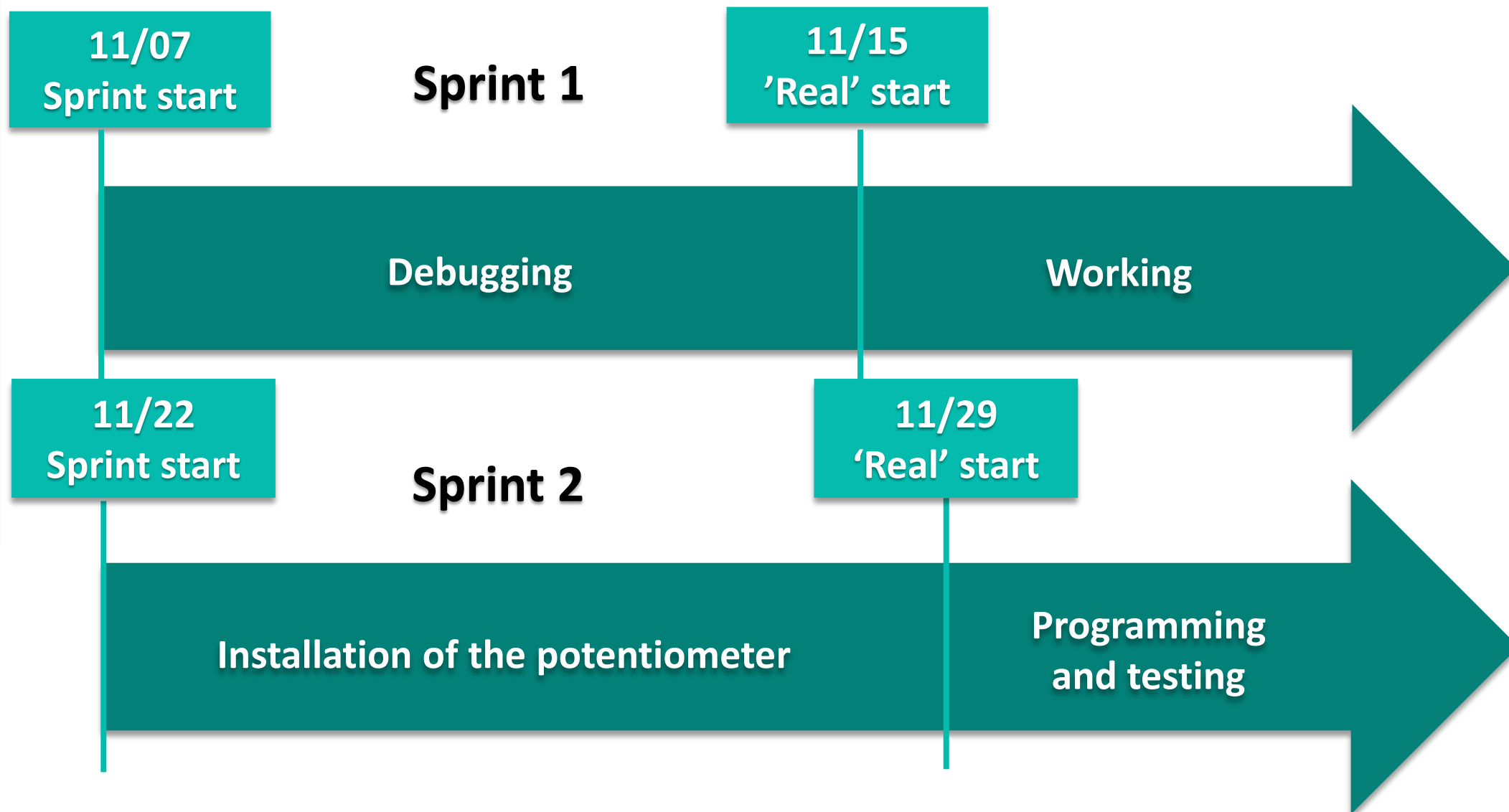
3 Goals

Trailer angle

Car automation

Obstacle avoidance

Reverse search





12/6
Sprint start

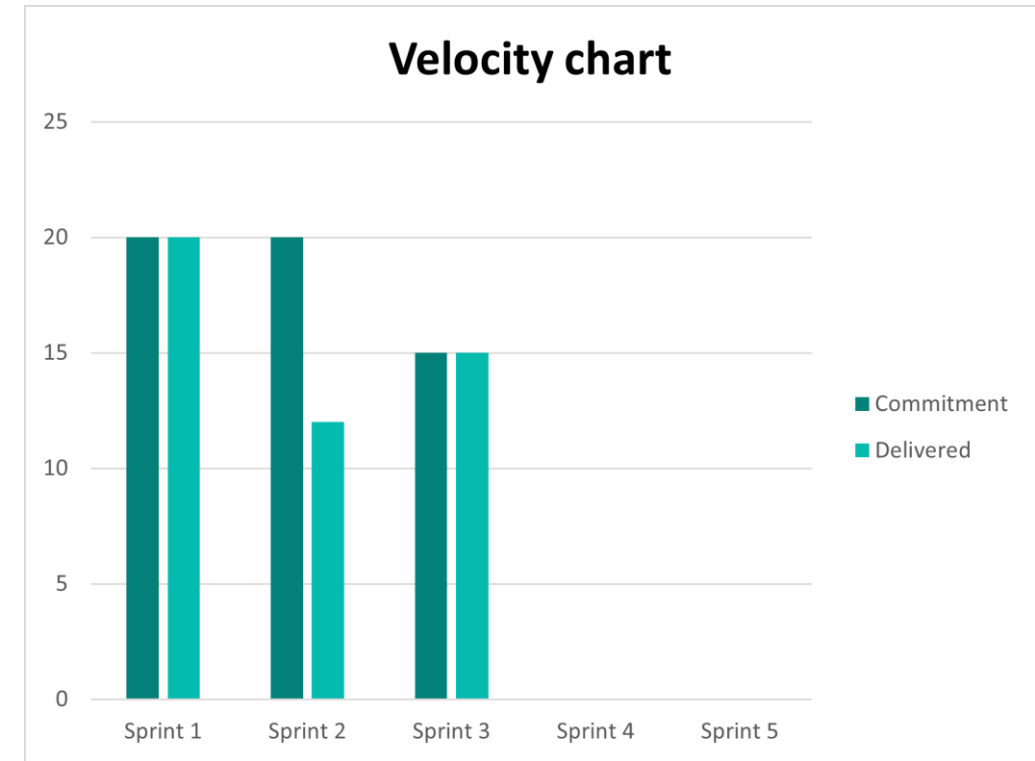
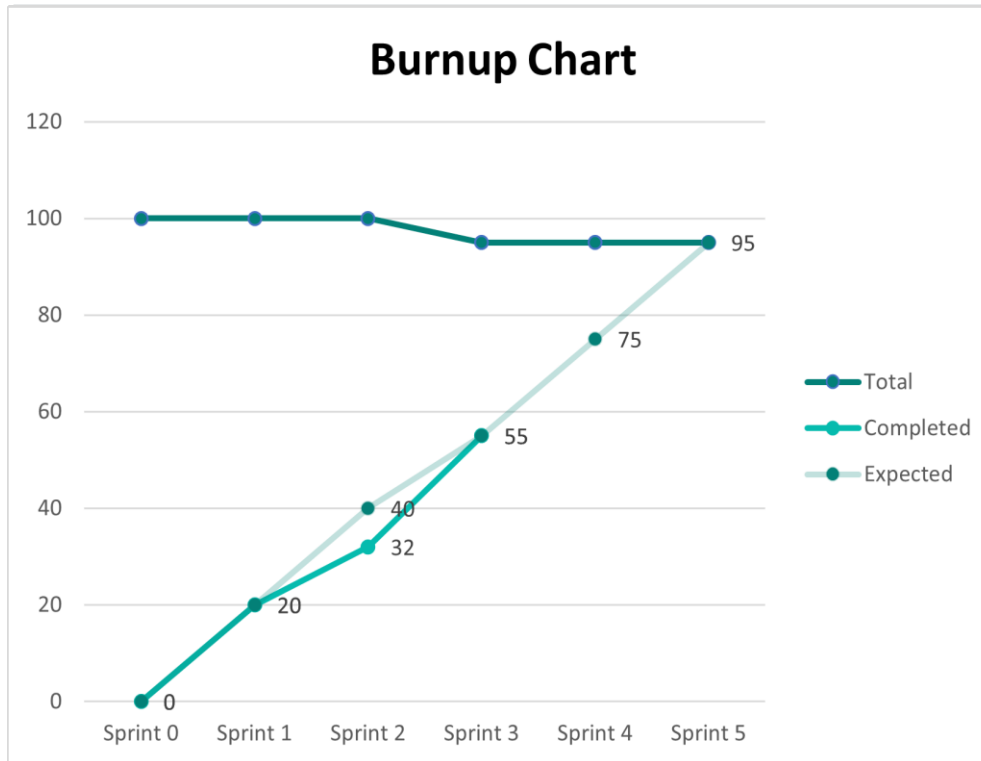


12/6
'Real' start

Programming
and testing



4

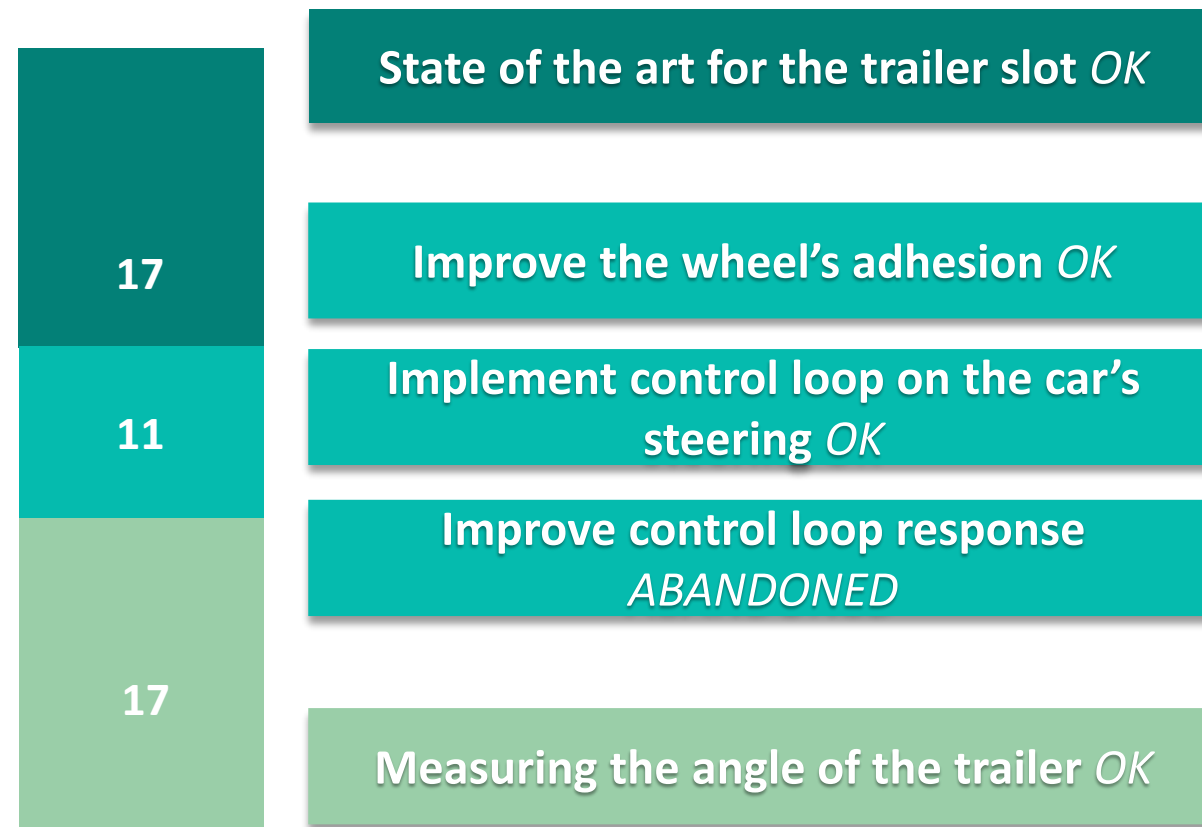


Deleting a task

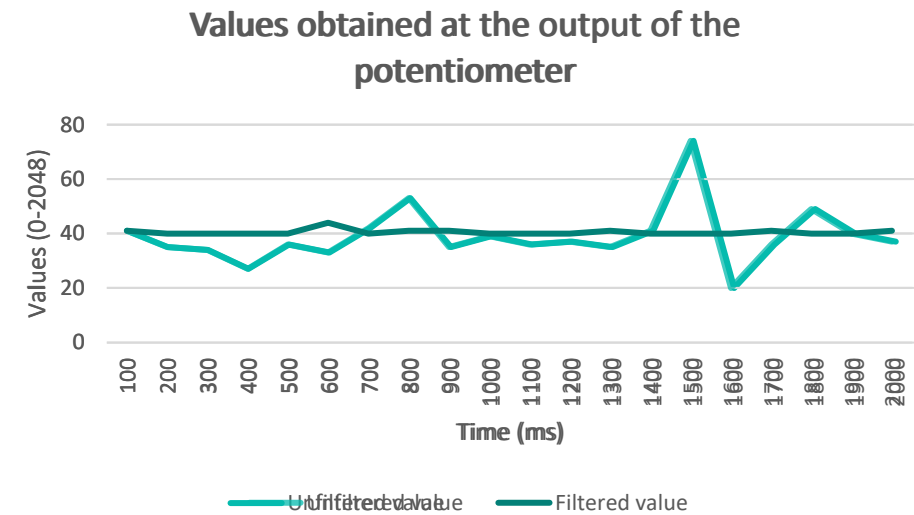
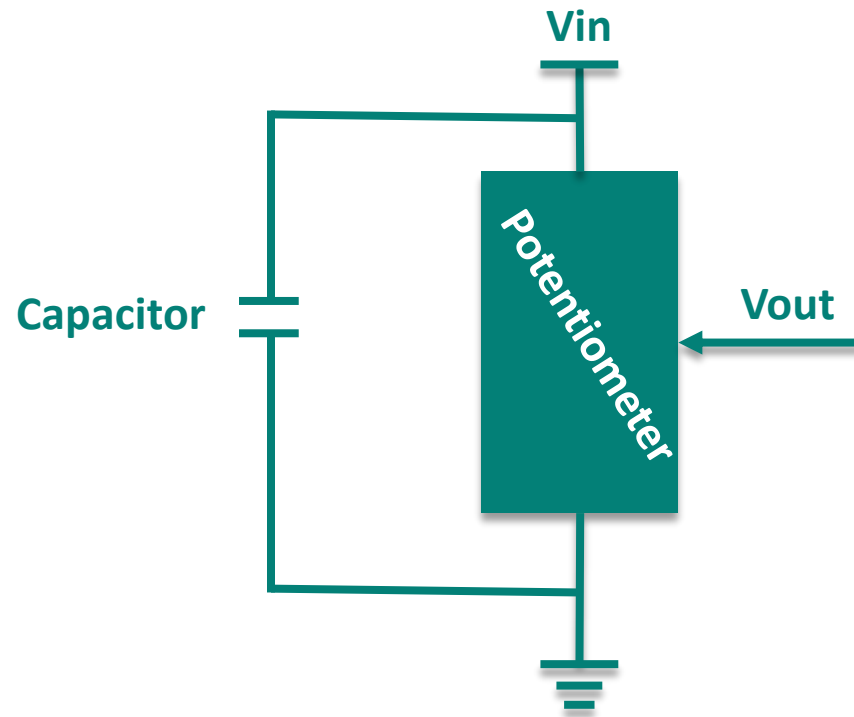
Better assessment of task complexity



4

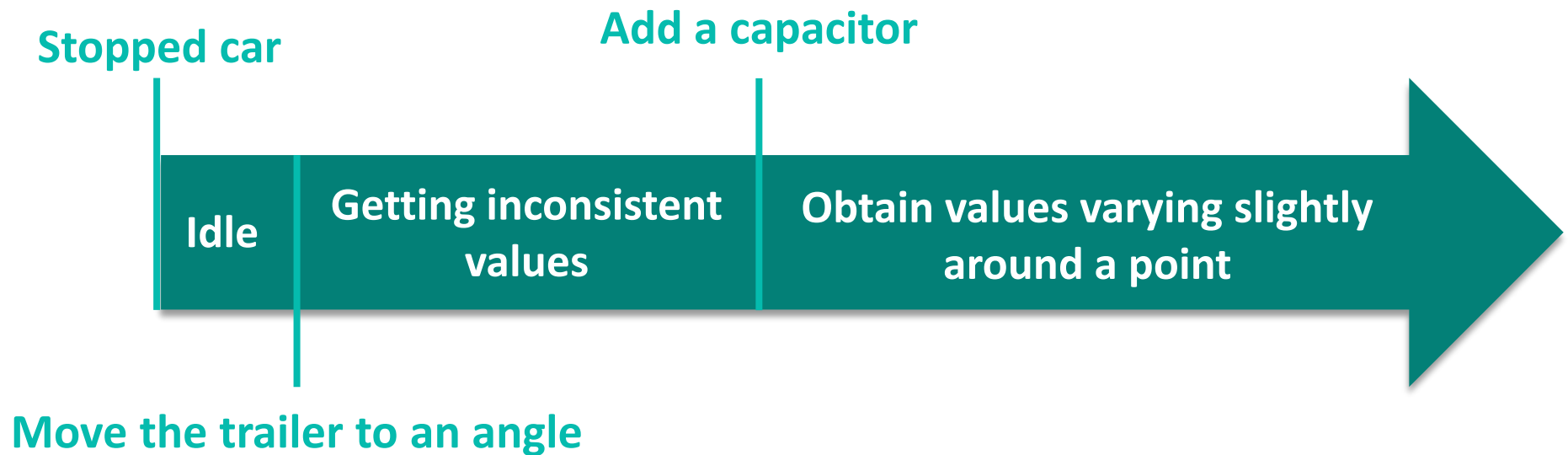


4



4

Demonstration sequence : get stable values on the potentiometer



4

Let's see the demonstration!

Live Expressions X SFRs	
	Value
	Failed to evaluate expression
	Failed to evaluate expression
	41 ')'

Live Expressions X SFRs	
	Value
	40 '('

4

Demonstration sequence : get angle of the car (STM32)

Stopped car

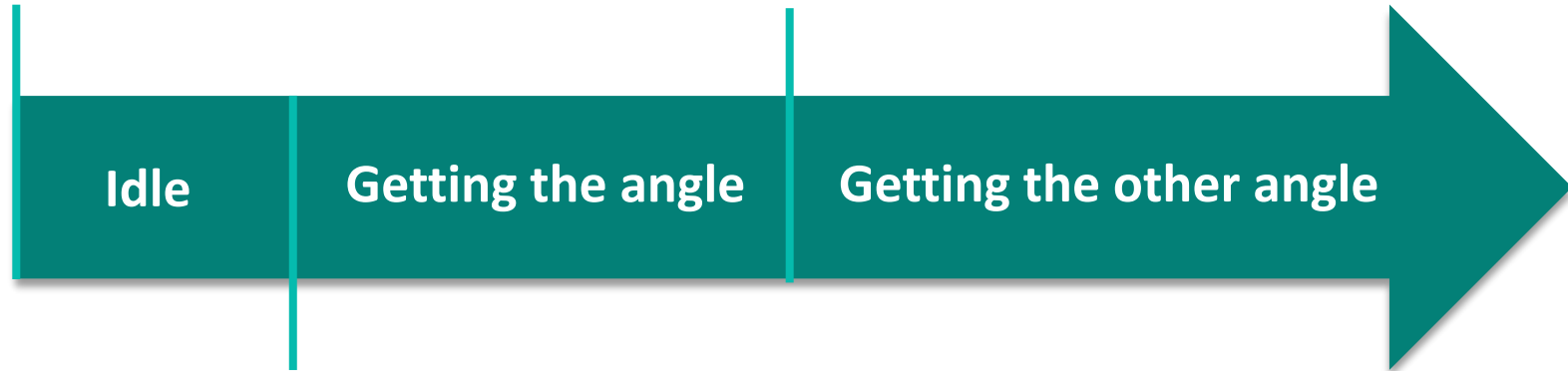
Moving the trailer to another angle

Idle

Getting the angle

Getting the other angle

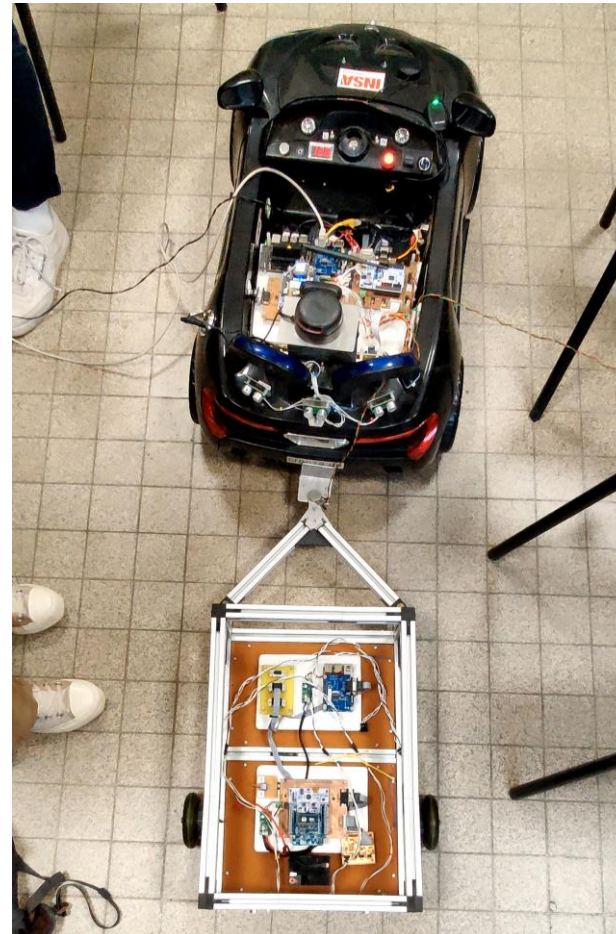
Moving the trailer



4

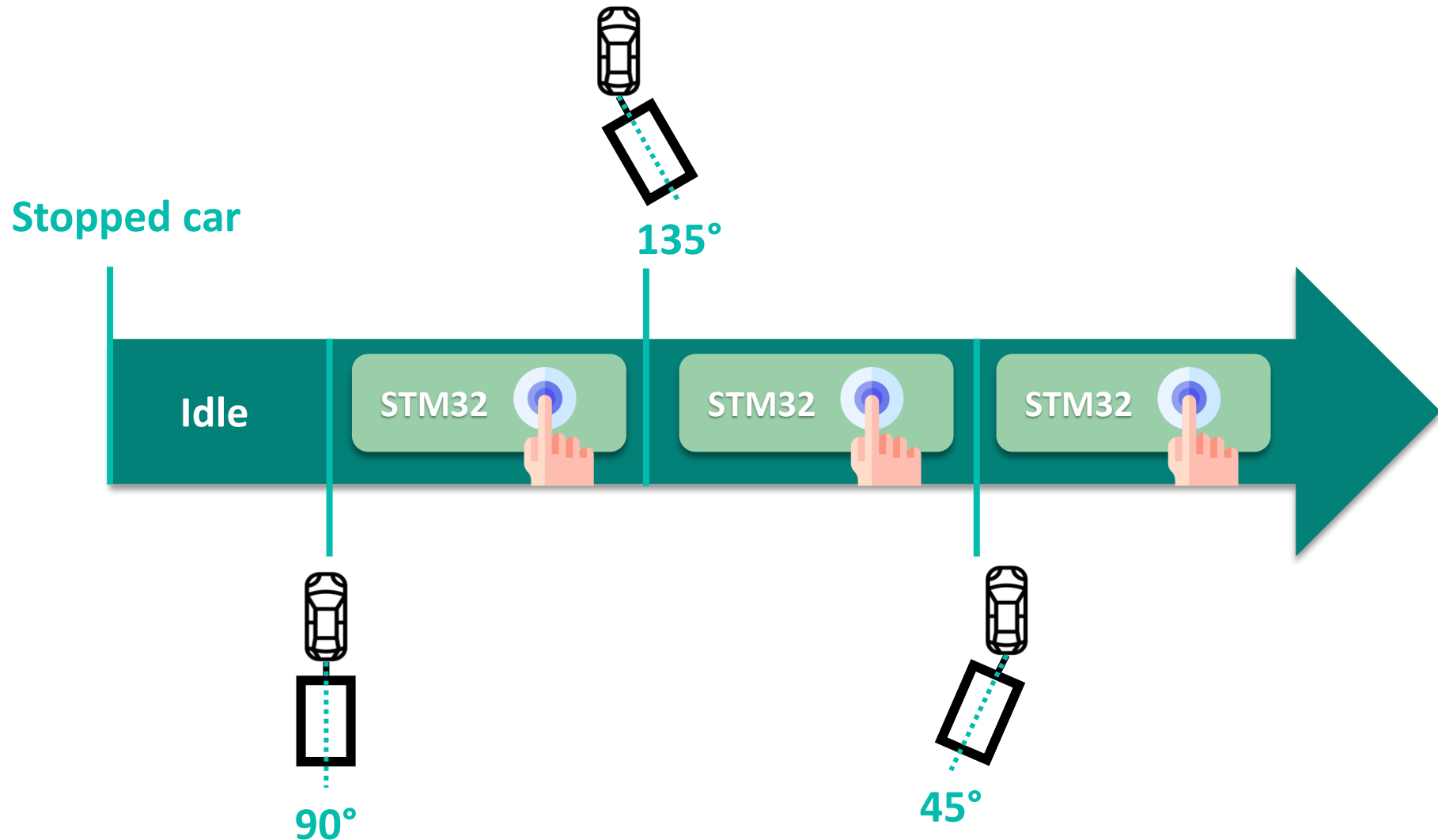


Expression	Type	Value
dataTransmit	uint8_t	38 '8'
Add new expression		



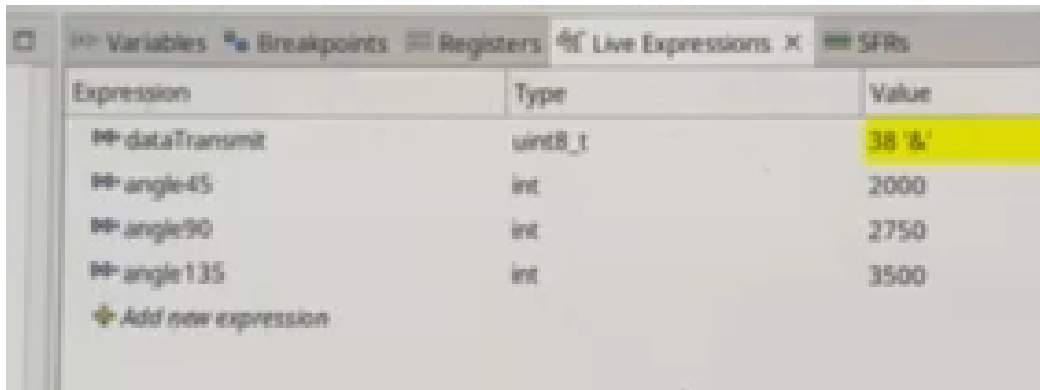
4

Demonstration sequence : calibrate the angle of the trailer



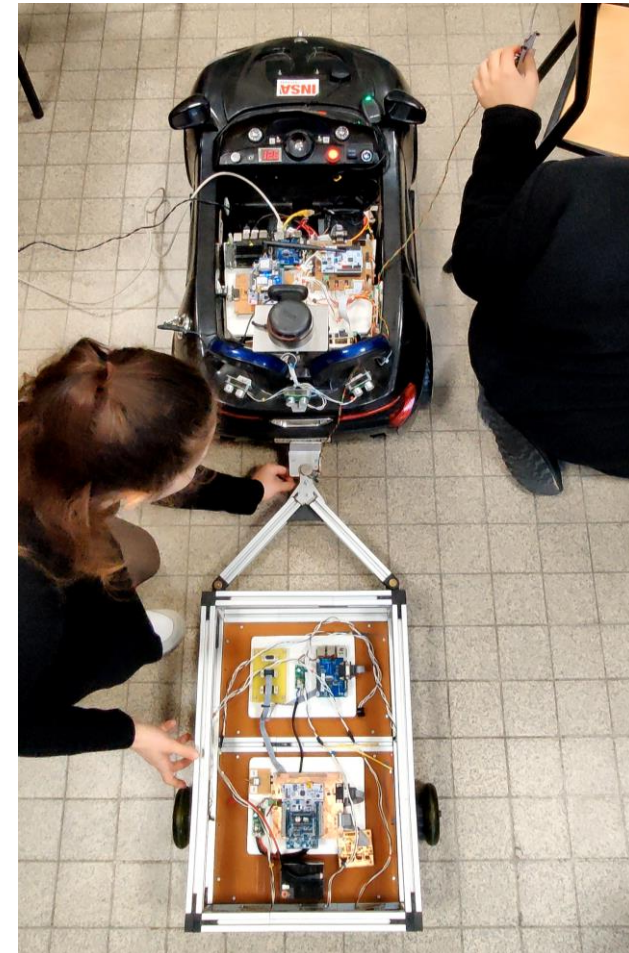
4

Let's see the demonstration!



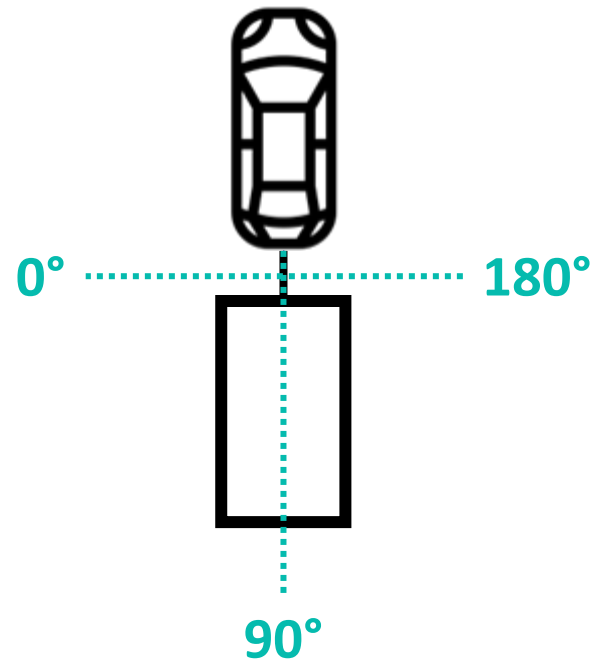
A screenshot of a debugger's 'Live Expressions' window. The window has tabs for 'Variables', 'Breakpoints', 'Registers', 'Live Expressions', and 'SFRs'. The 'Live Expressions' tab is active, showing a table with three columns: 'Expression', 'Type', and 'Value'. The table contains the following data:

Expression	Type	Value
MP_dataTransmit	uint8_t	38 '&'
MP_angle45	int	2000
MP_angle90	int	2750
MP_angle135	int	3500
+ Add new expression		



4

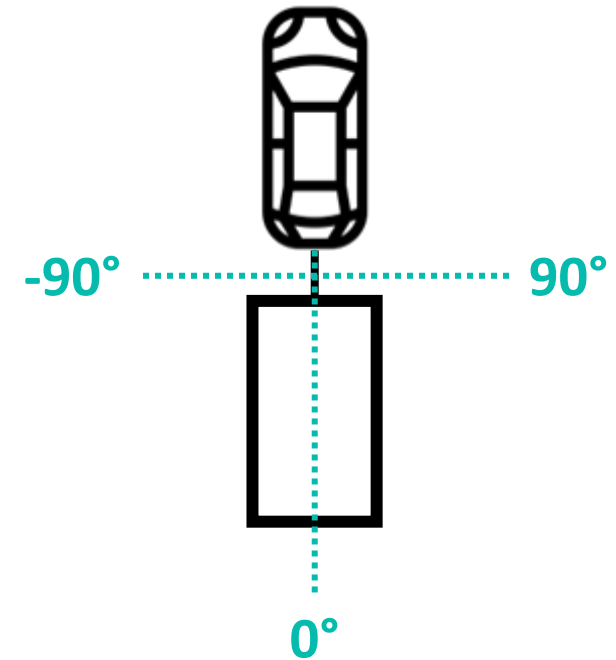
Angle convention



Transfer unsigned float

Less user-friendly

STM32



Transfer signed float

More user-friendly

Raspberry

4

Demonstration sequence : get angle of the car (Raspberry)

Stopped car

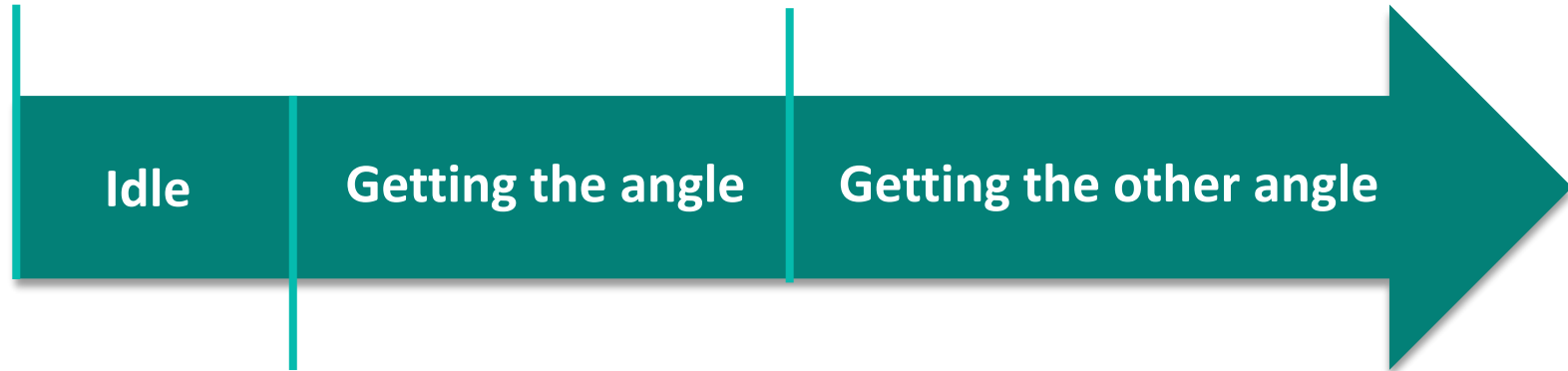
Moving the trailer to another angle

Idle

Getting the angle

Getting the other angle

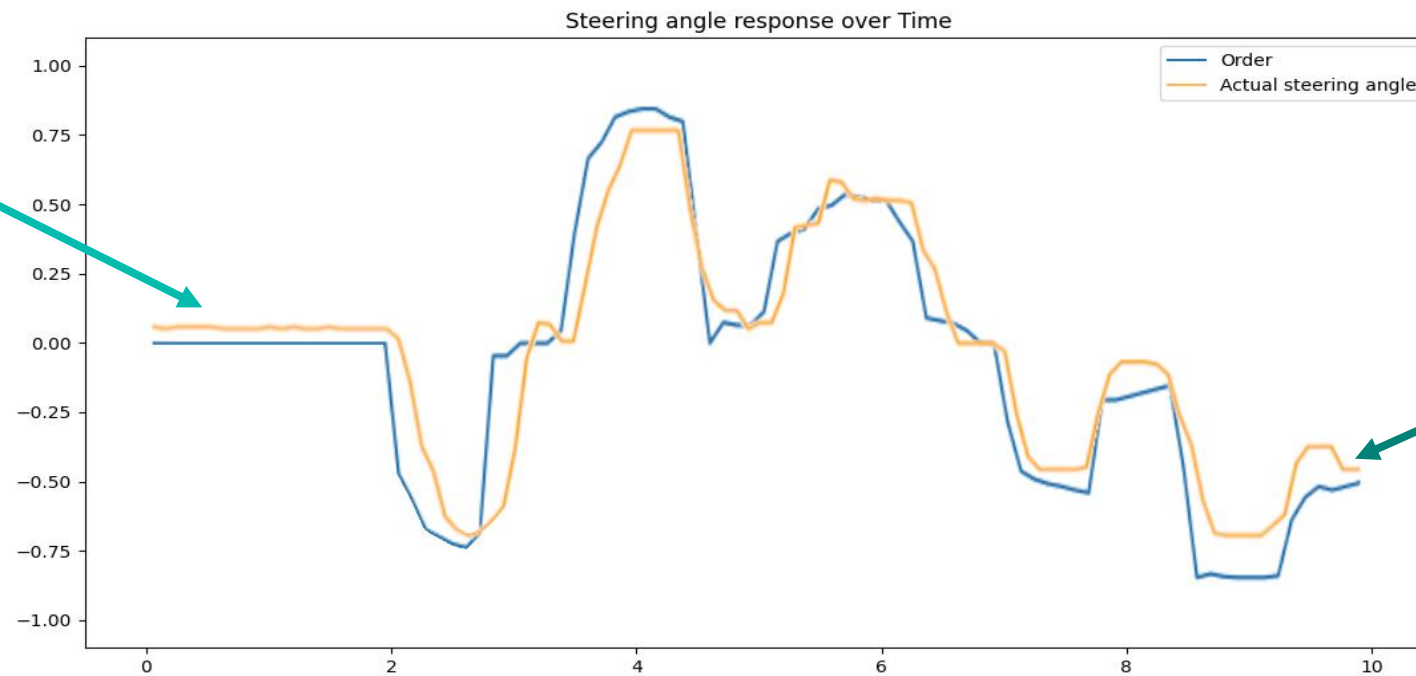
Moving the trailer



4

Wheels steering control

Tolerance
error



Overshoot

4

Let's see the demonstration!



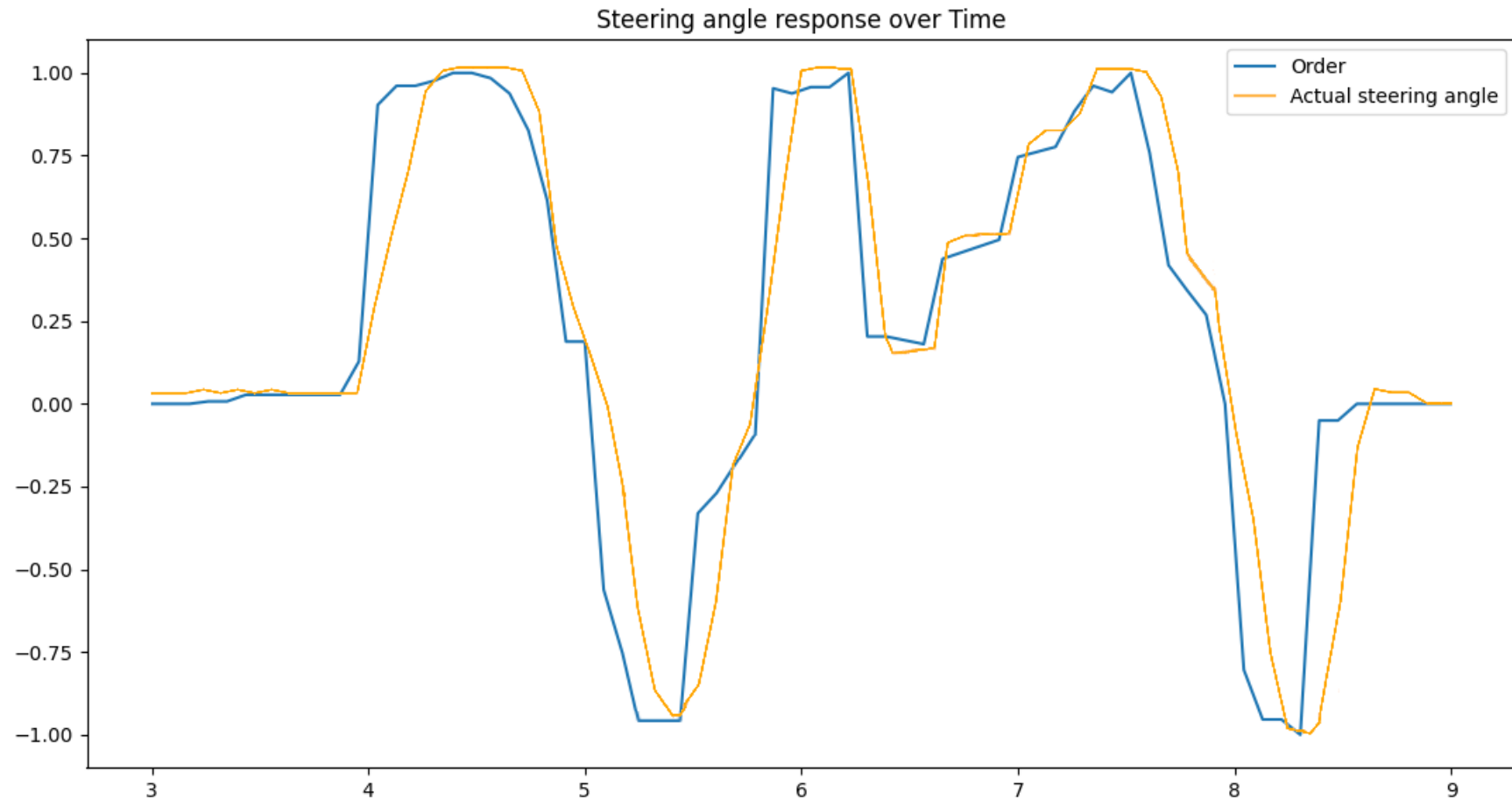
Old behavior



New behavior

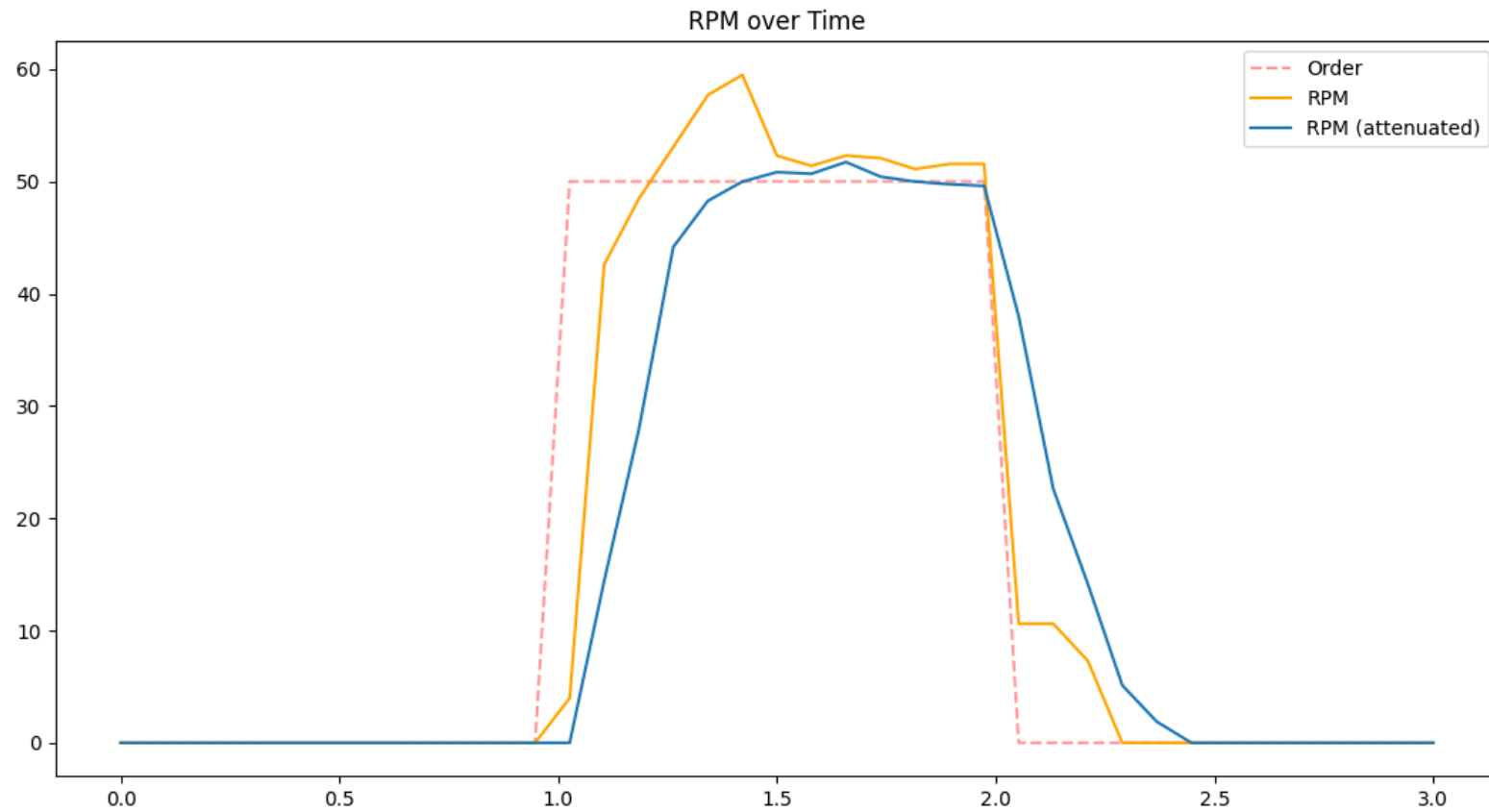
4

Let's see the demonstration!



4

Grip improvement



4

Demonstration sequence

Stopped car

Release the joystick

Release the joystick

Idle

Car moves

Car stops while drifting

Car moves

Car stops without drifting

Without the filter:
moving the car
with the joystick

With the filter:
moving the car
with the joystick

4

Let's see the demonstration!



Old behavior



New behavior

4



SCRUM Master : Malaurie Bernard

3 Goals

Android application

Reverse straight line

Command automation



The car sends the data to a server

13

application get the data

13

The application display data
minimalistically

3

Reverse control with the trailer

17

Command reception

8

Record command

8

Send command using joystick button

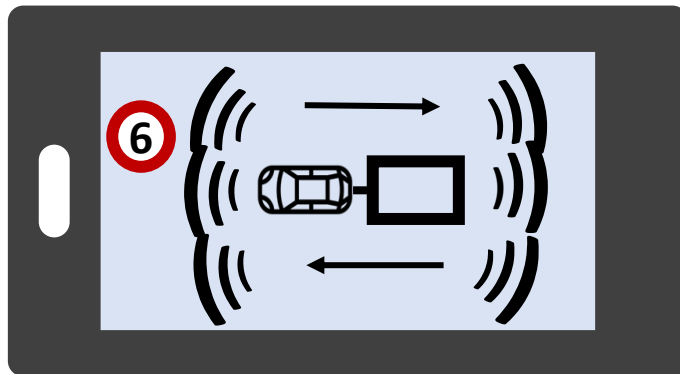
5

Android application

Initial state: Stopped car

Action: Manual moving

Result: Data displays on the application

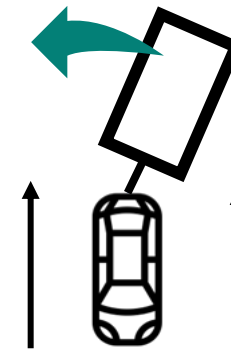


Car automation

Initial state: Stopped car

Action: Automatic reversing

Result: When the trailer deviates, it returns to the trajectory on its own.

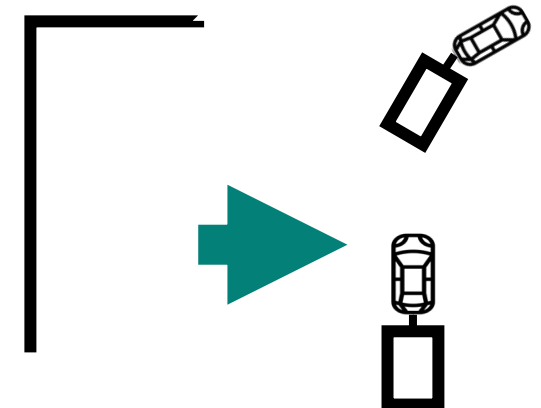


Command automation

Initial state: Stopped car

Action: Perform a sequence, save it and activate it with a button of the controller

Result: The car do the sequence



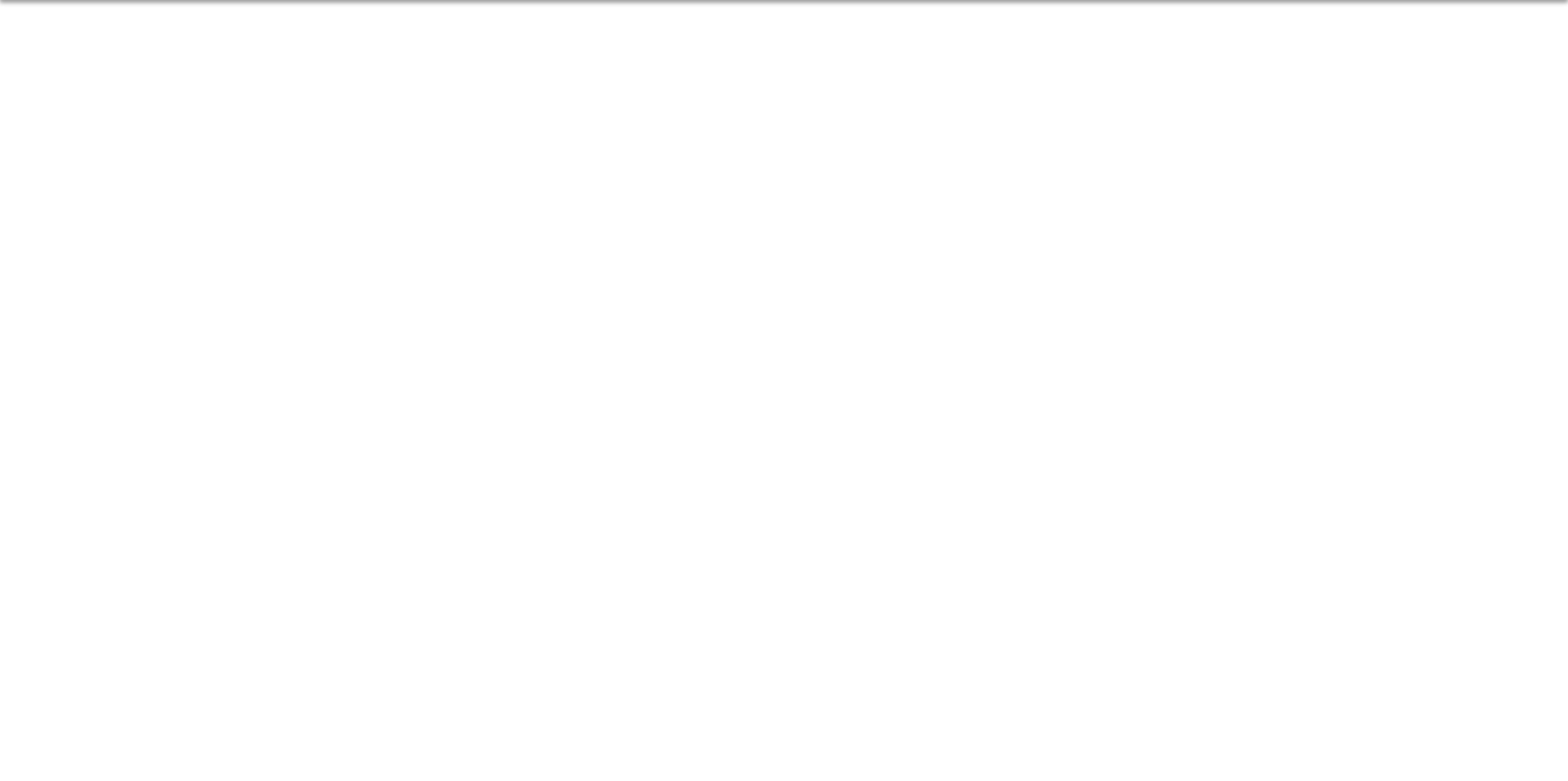
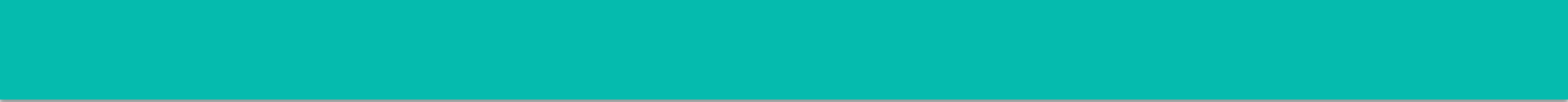


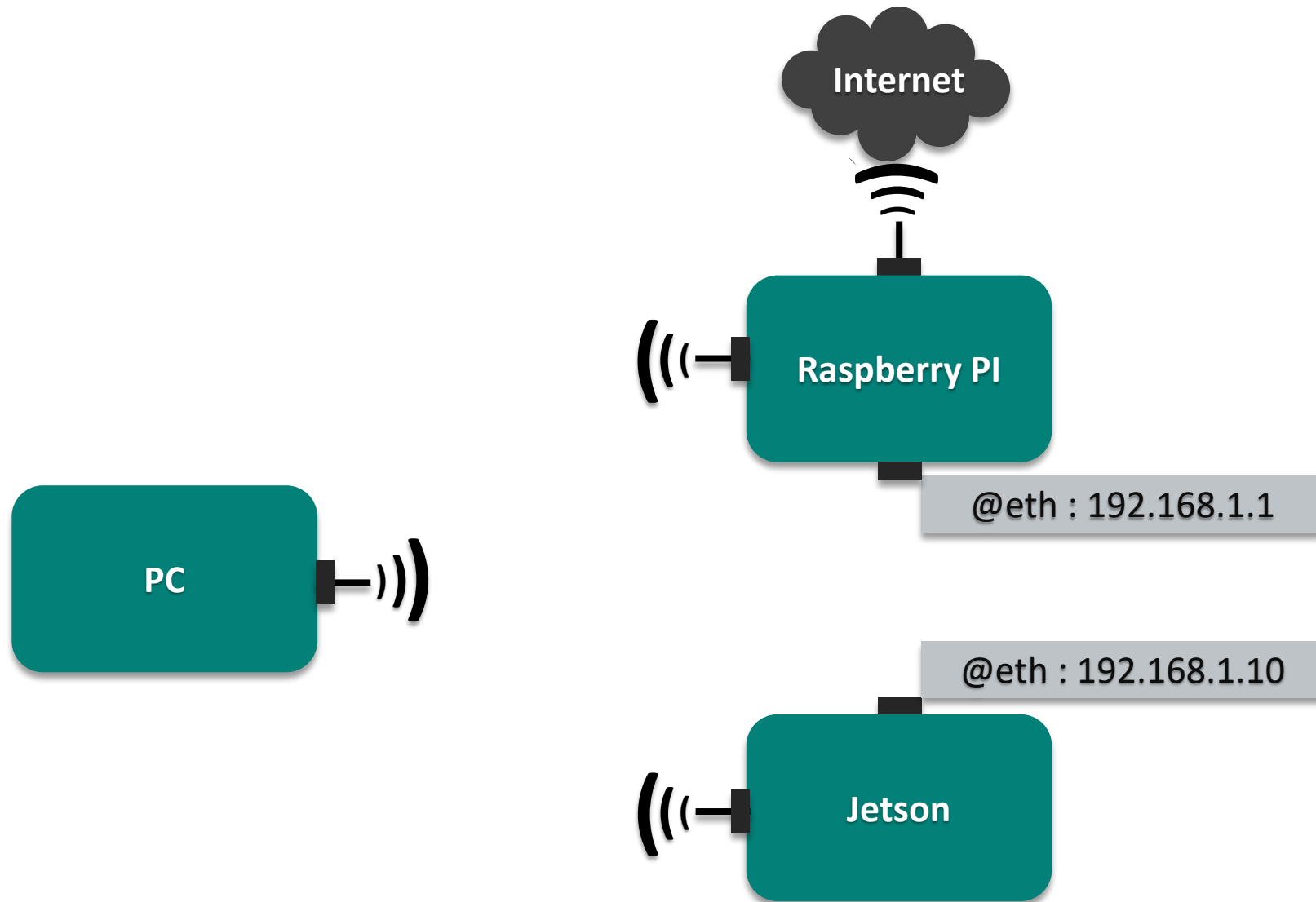
Suggestions & Questions ?

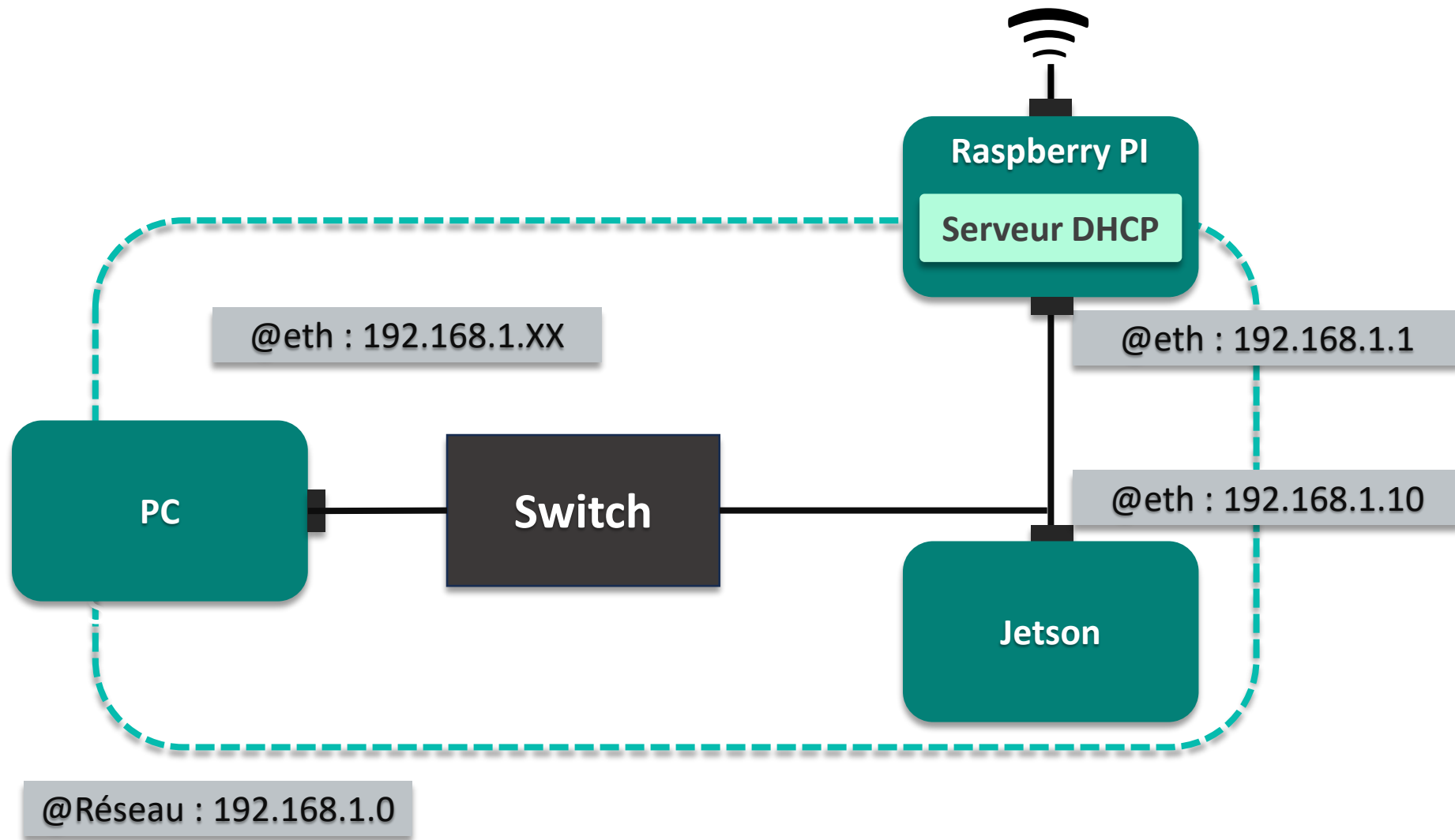
TrailerMate – Review 3

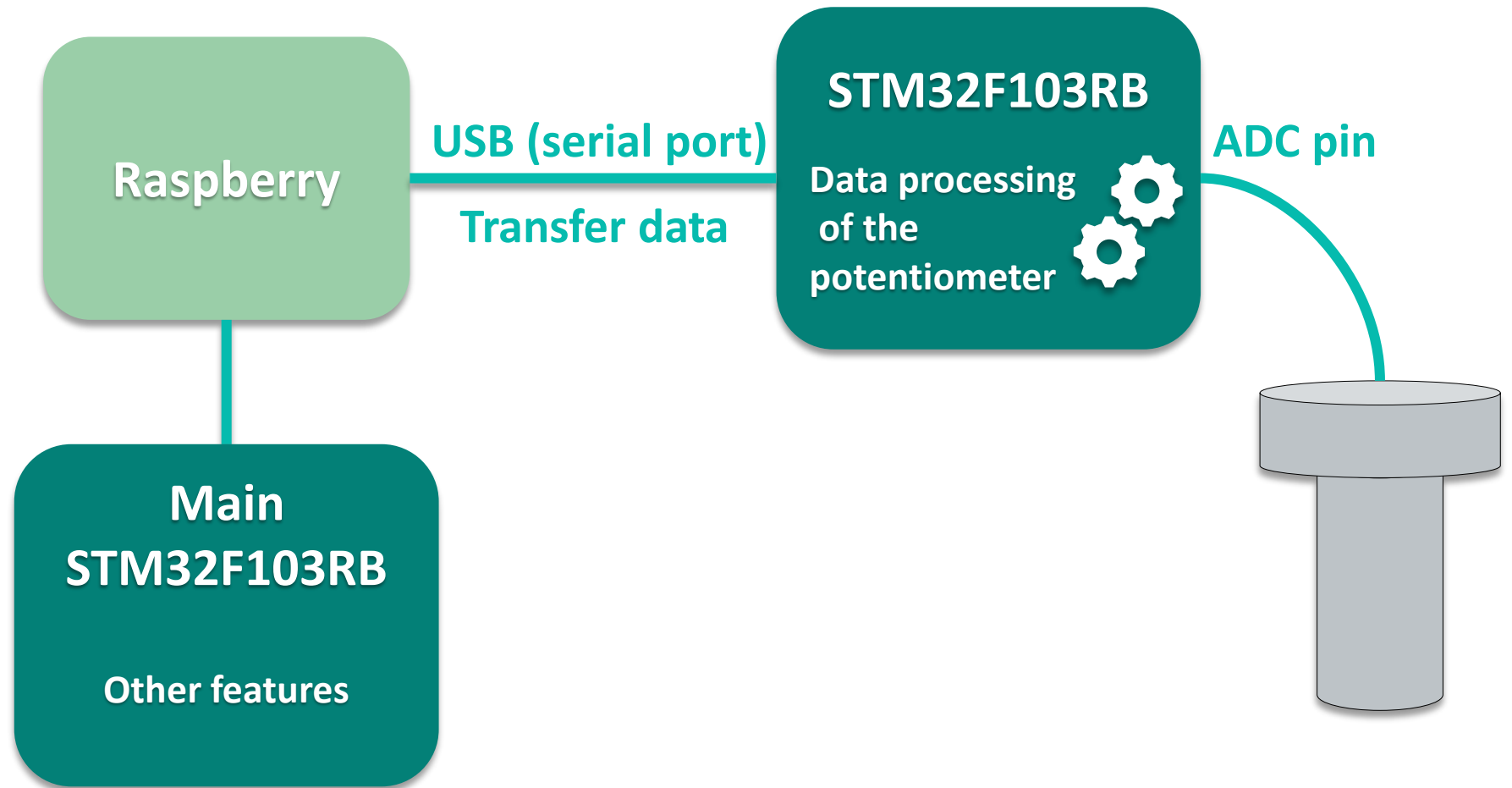
27/27

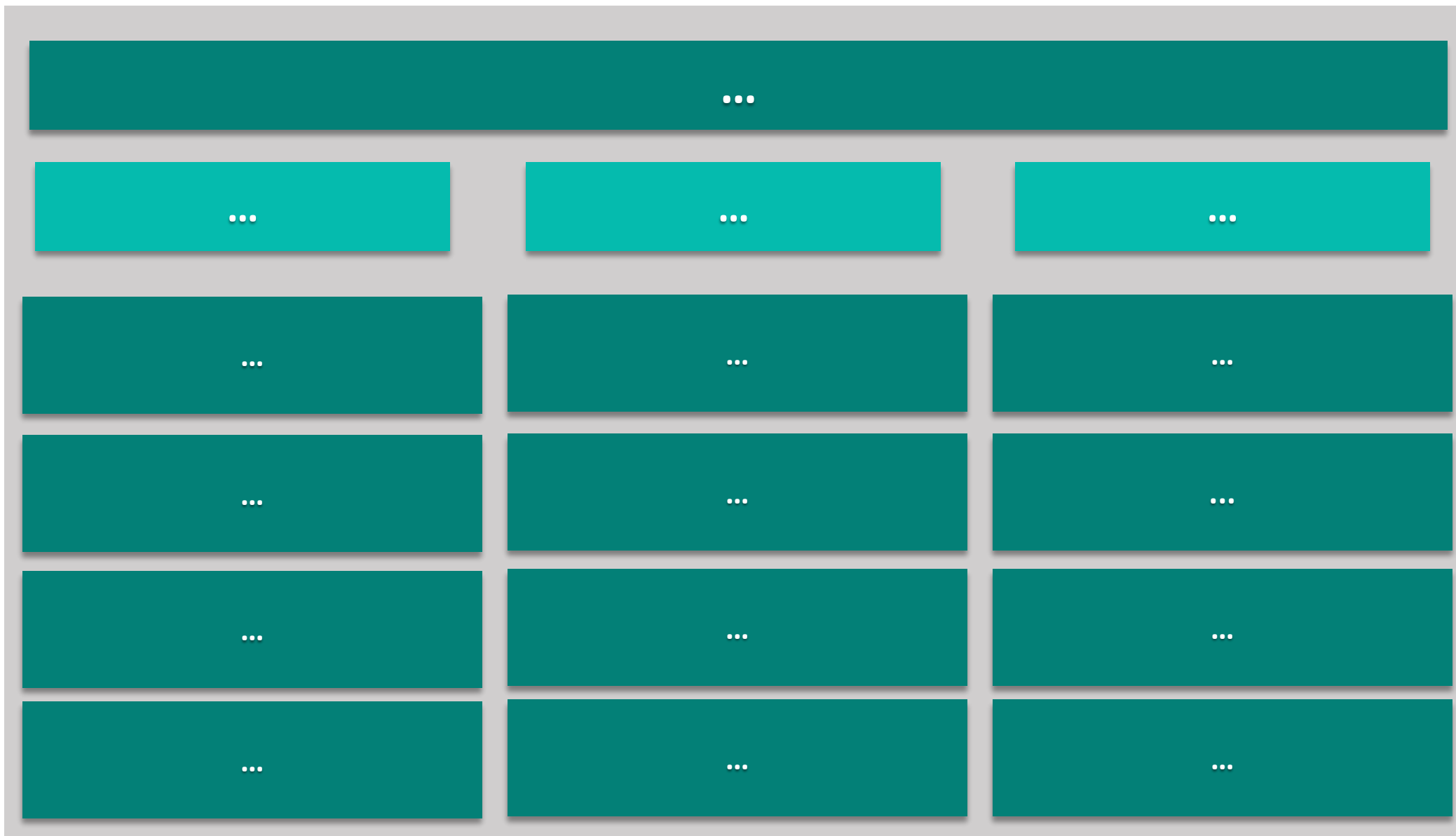
















...

...



...



...



...



...



...

1

...

2

...

3

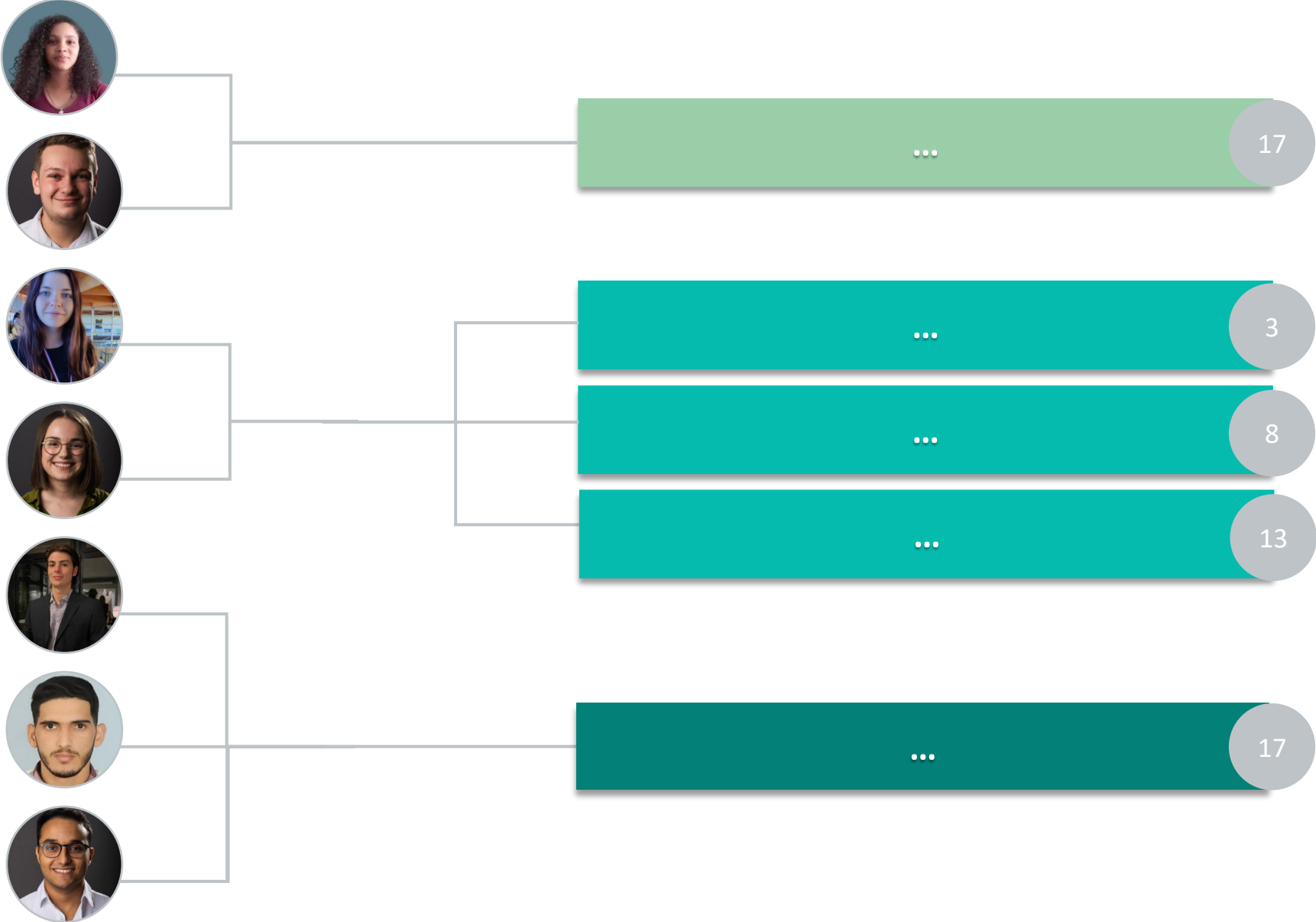
...

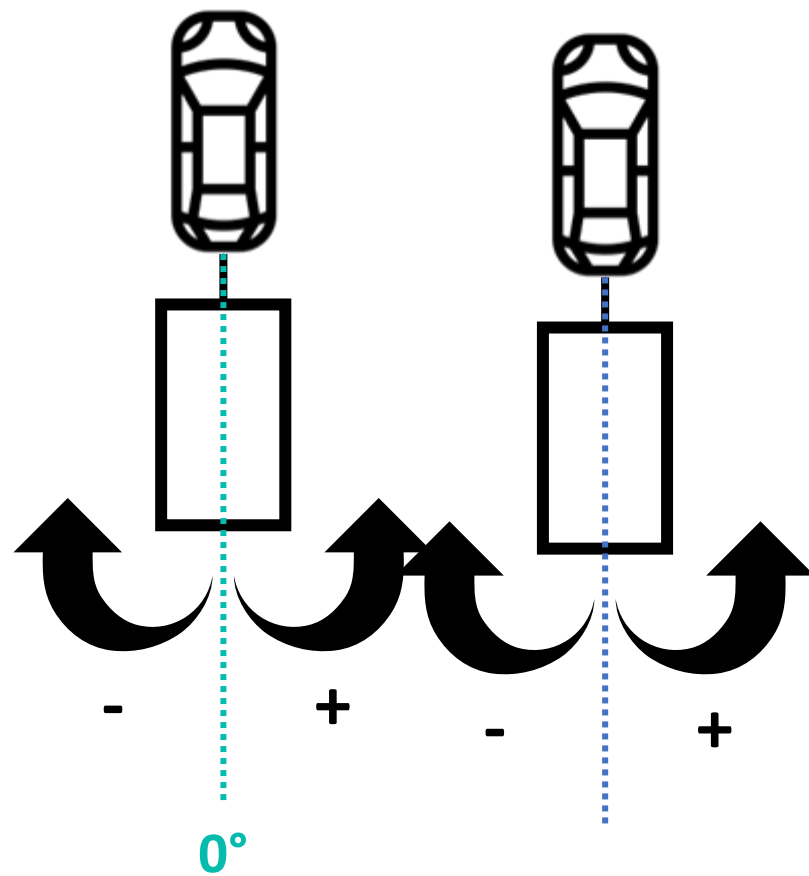
4

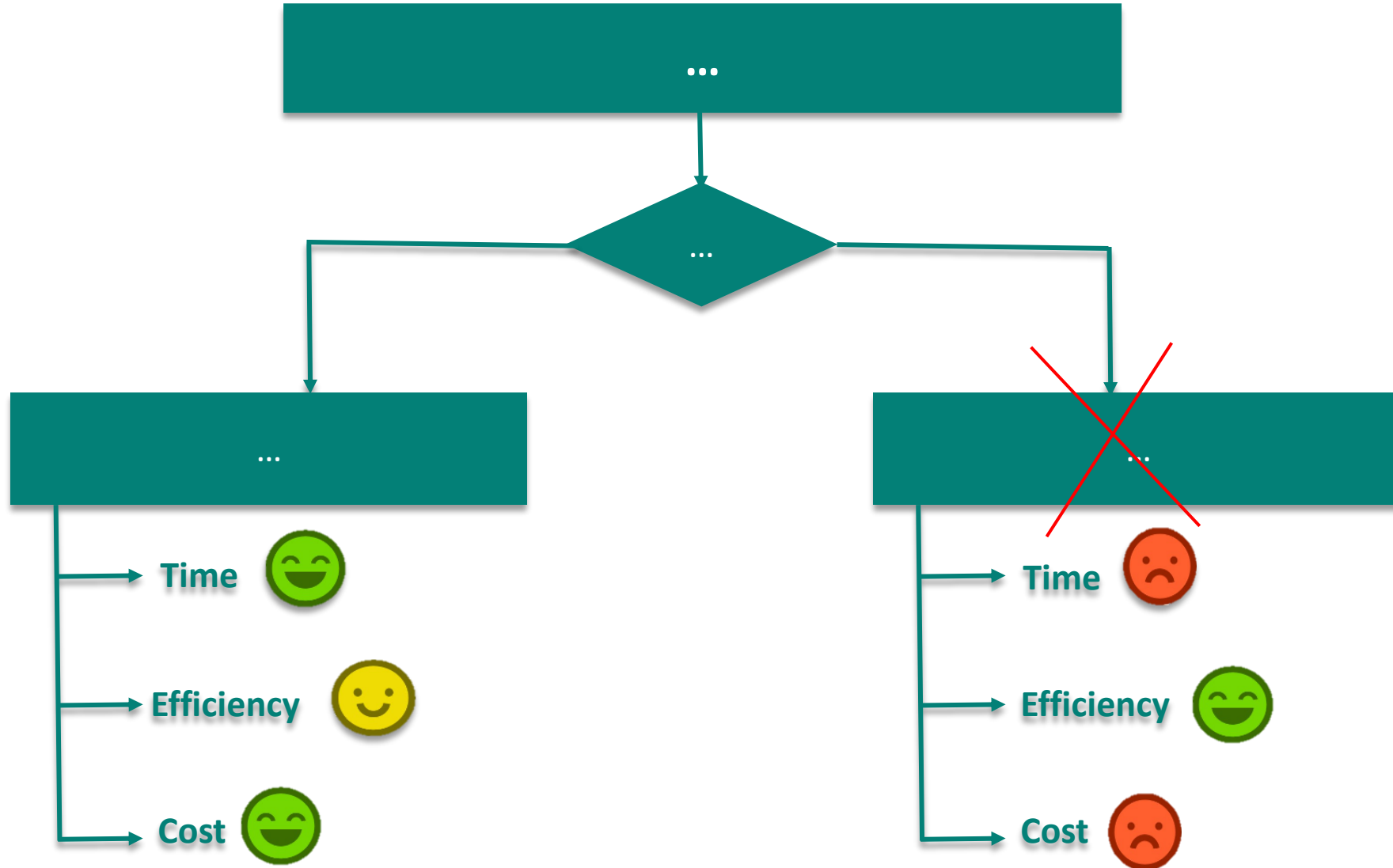
...

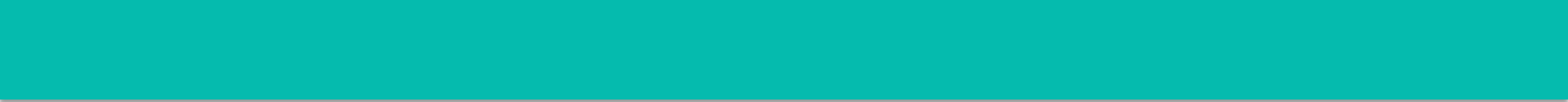
5

...

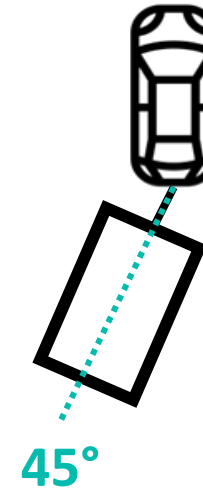
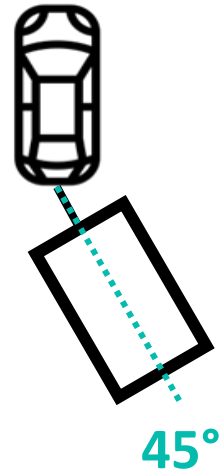




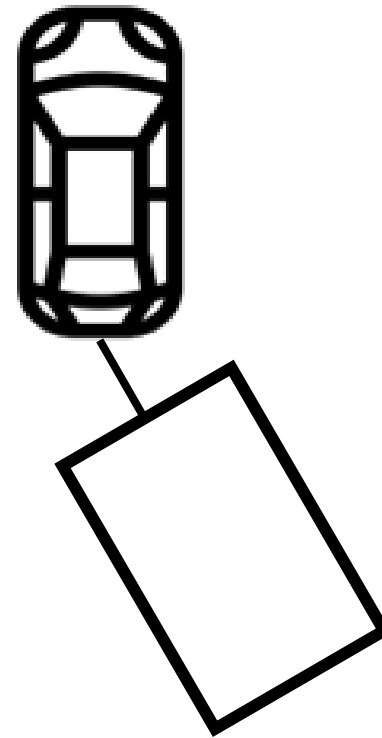
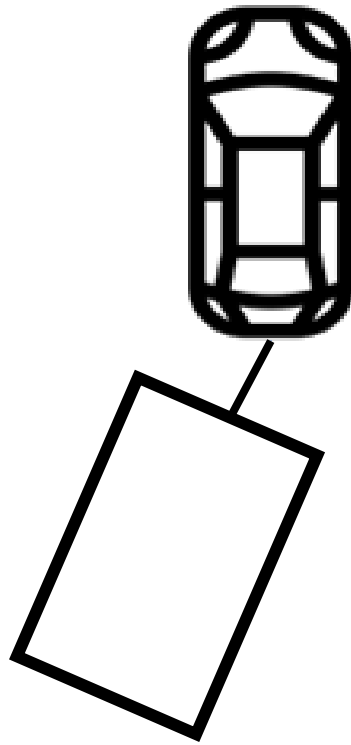
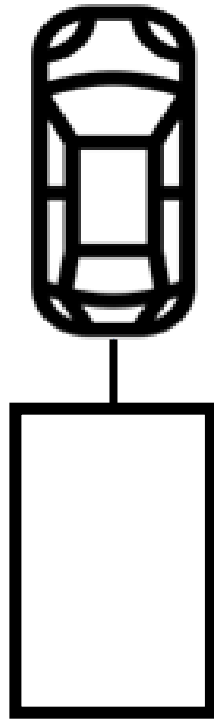




**Angle
Team**



4

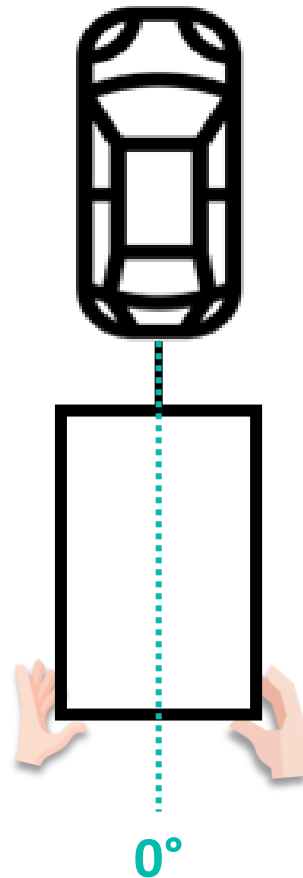


**Angle
Team**

4

Calibration step

**Angle
Team**



STM32F103RB



