

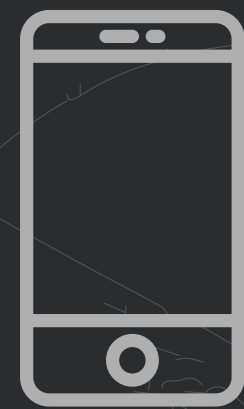


MALACHI



What do you do when you are involved in a car accident?

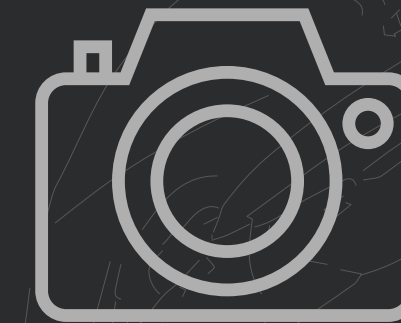
Would you do



Improve Convenience



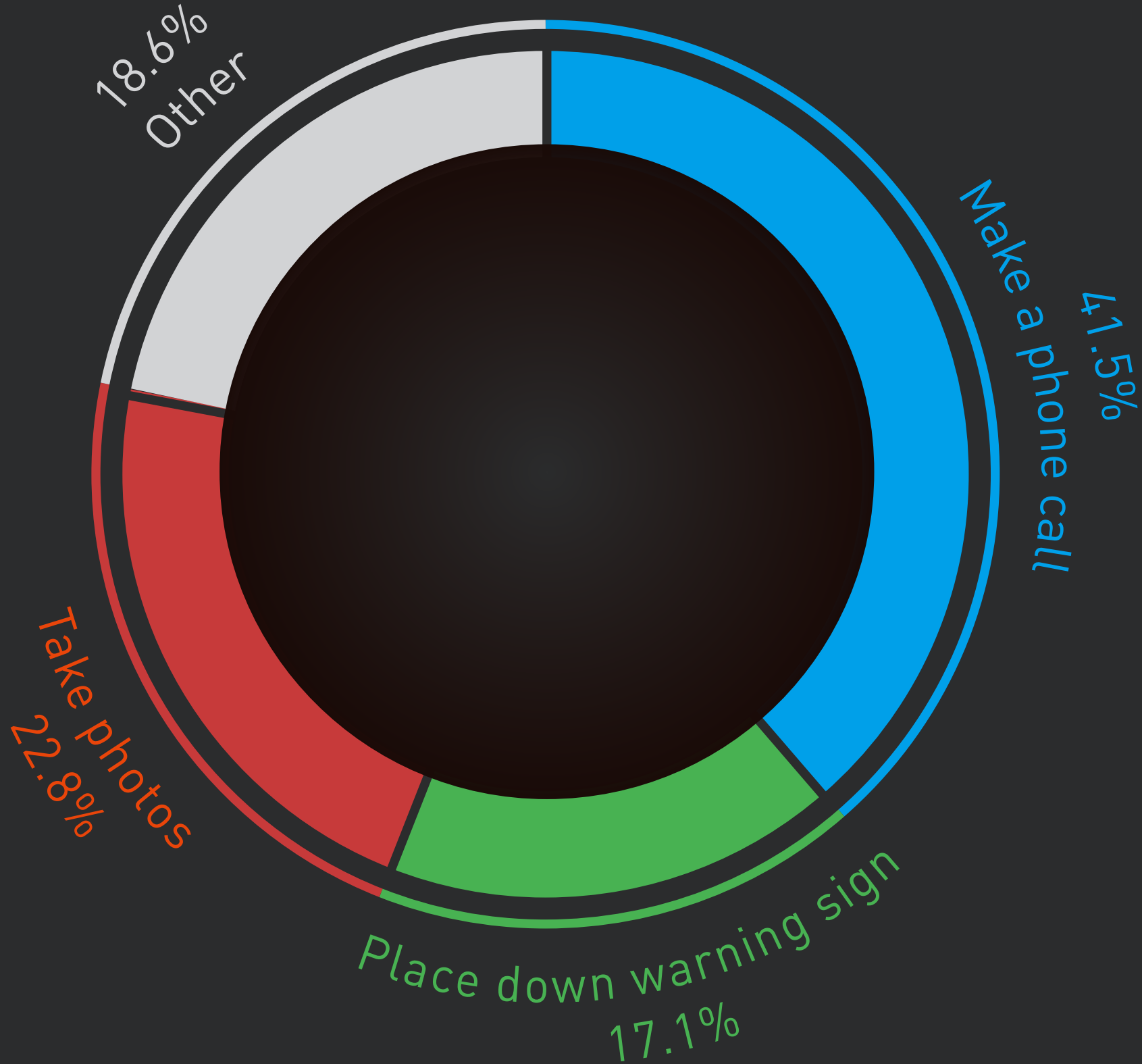
Increase Safety Device



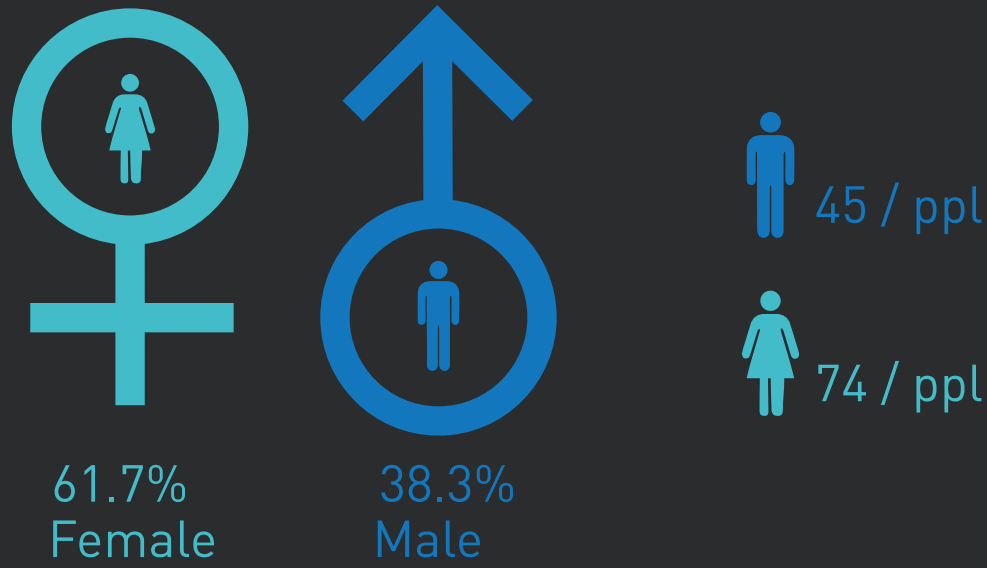
Response Natural Disaster

Data Research

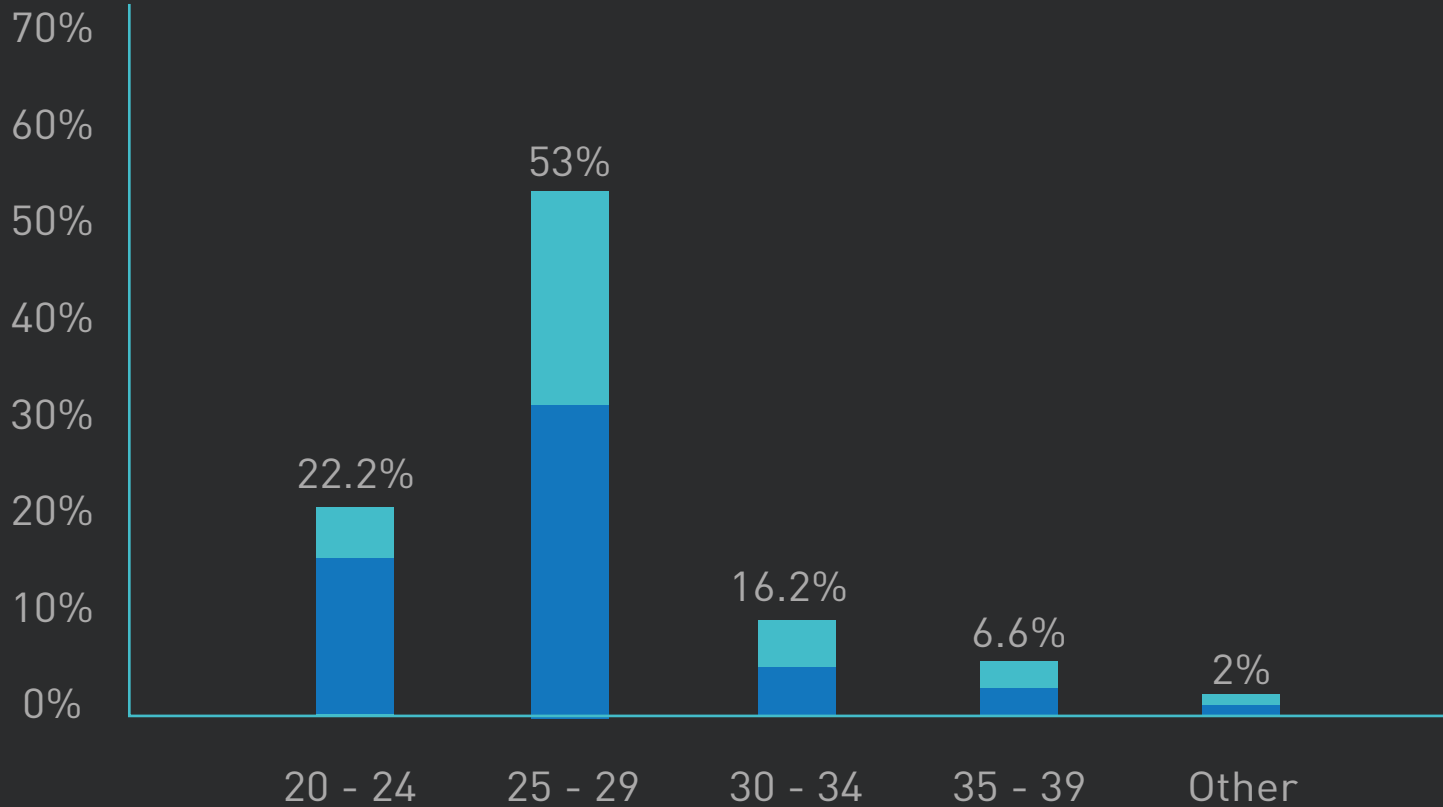
What would you do first when involved in a vehicle accident?



Gender



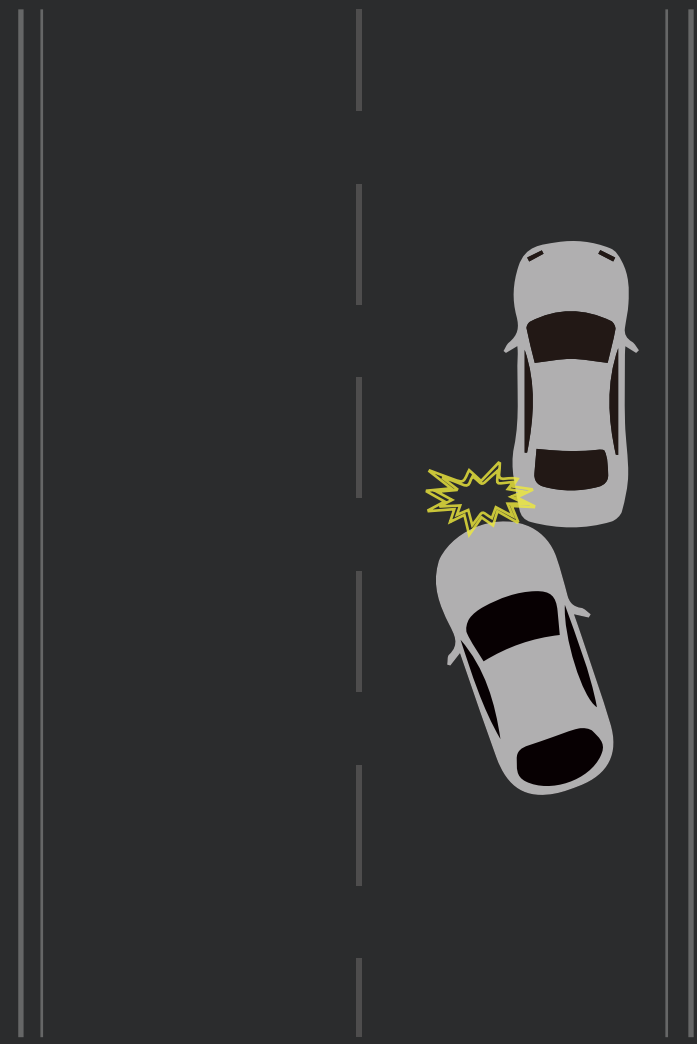
Age



Secondary Accident

Accident

Car Crash



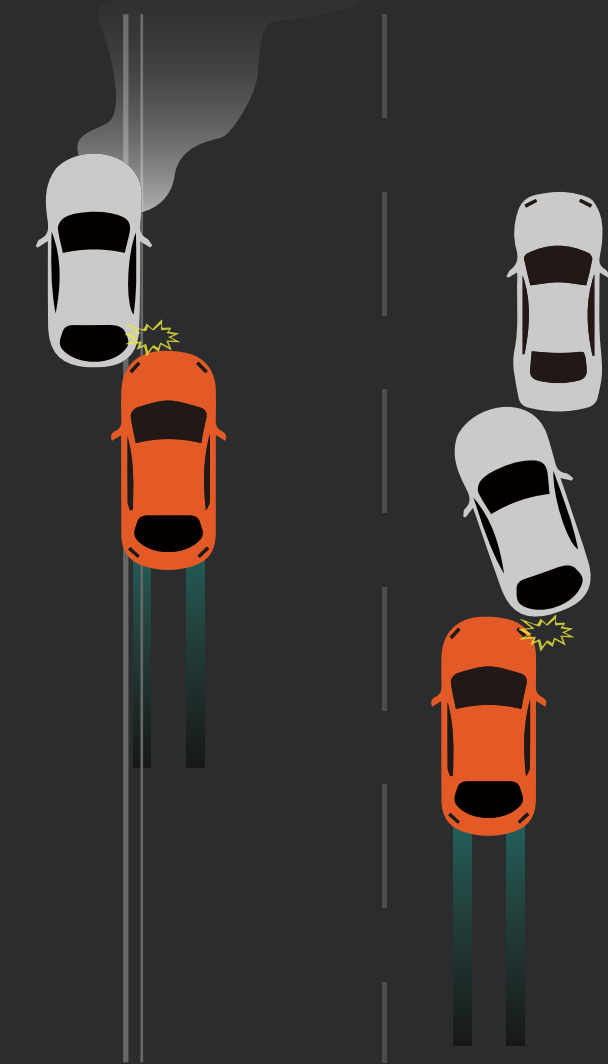
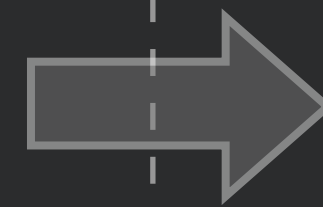
Or

Breakdown



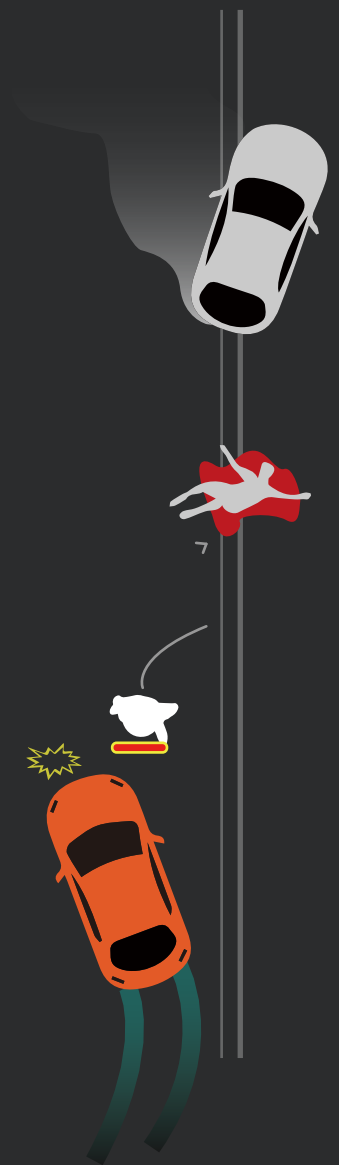
Issue

Secondary Accident



The orange car is not in the first accident, but then it hits one of the cars from the first accident.

Sometimes, the driver sets up a warning triangle after an accident.



The orange car can hit the driver setting up the warning triangle.

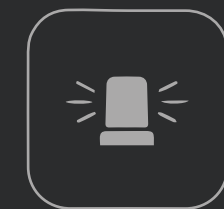
Vehicle Accident Standard Operating Procedure



1. Stop immediately and turn on emergency flashers.



2. Take steps to prevent another accident at the scene.



3. Call 911 or an ambulance if necessary.



4. Notify police law enforcement.

-
-
-
-

Automotive Sector of Active & Passive Safety System

Examples of active safety

Head up displays,
Anti-lock braking system, ABS
Electronic Stability Control, ESC

etc.

Examples of passive safety

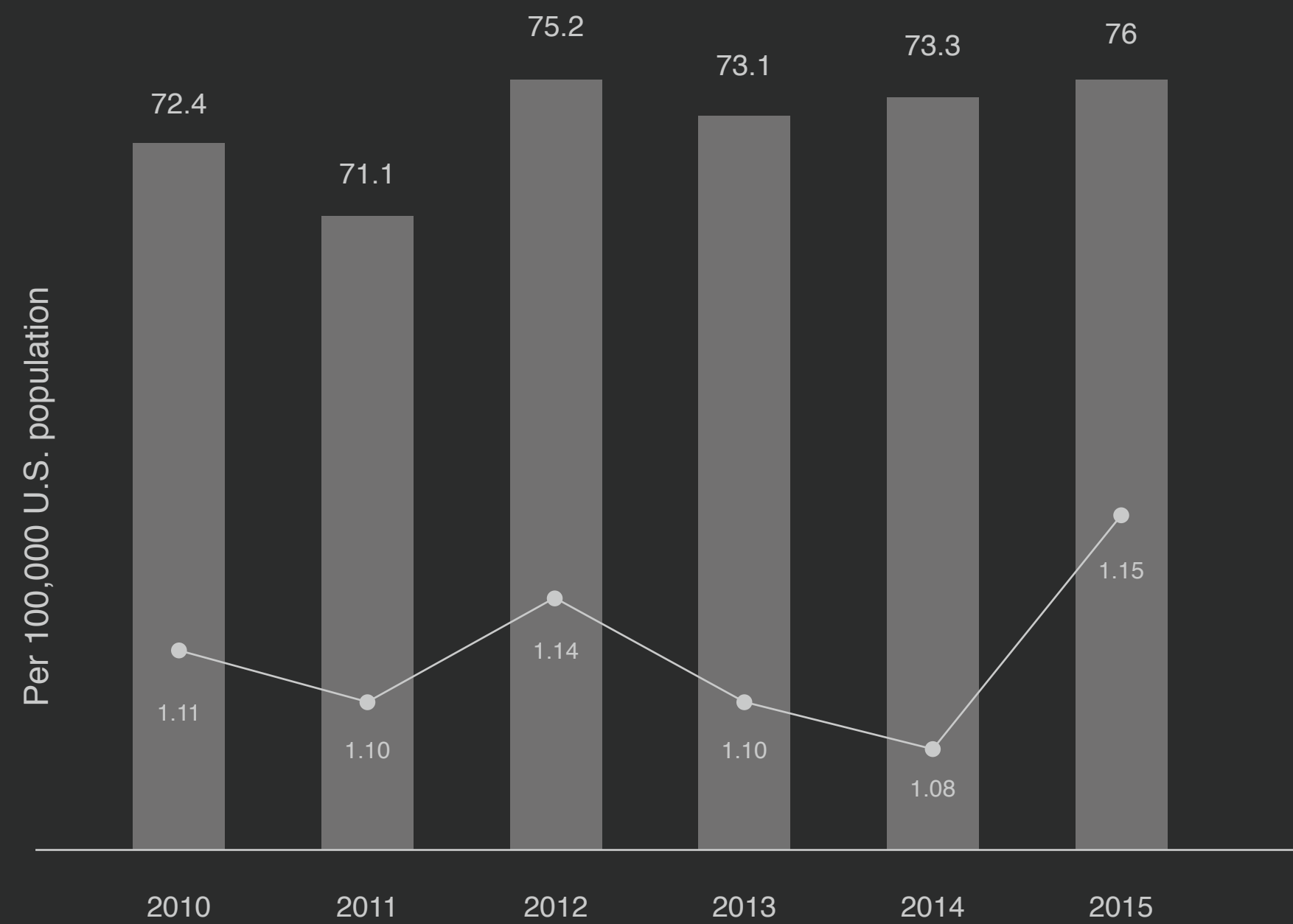
Seat belts,
Air bags,

etc.



Design Motivation

Traffic Injury & Death Probability



■ Traffic-related injury rate
— Fatality rate

U.S. fatal traffic crashes - Distinguish Situation

10% Occurrence Rate



● Failure to take safety precautions	10%	● Improper lane change	20.0%
● Did not pay attention to the front	21%	● Other	49%

Design Motivation



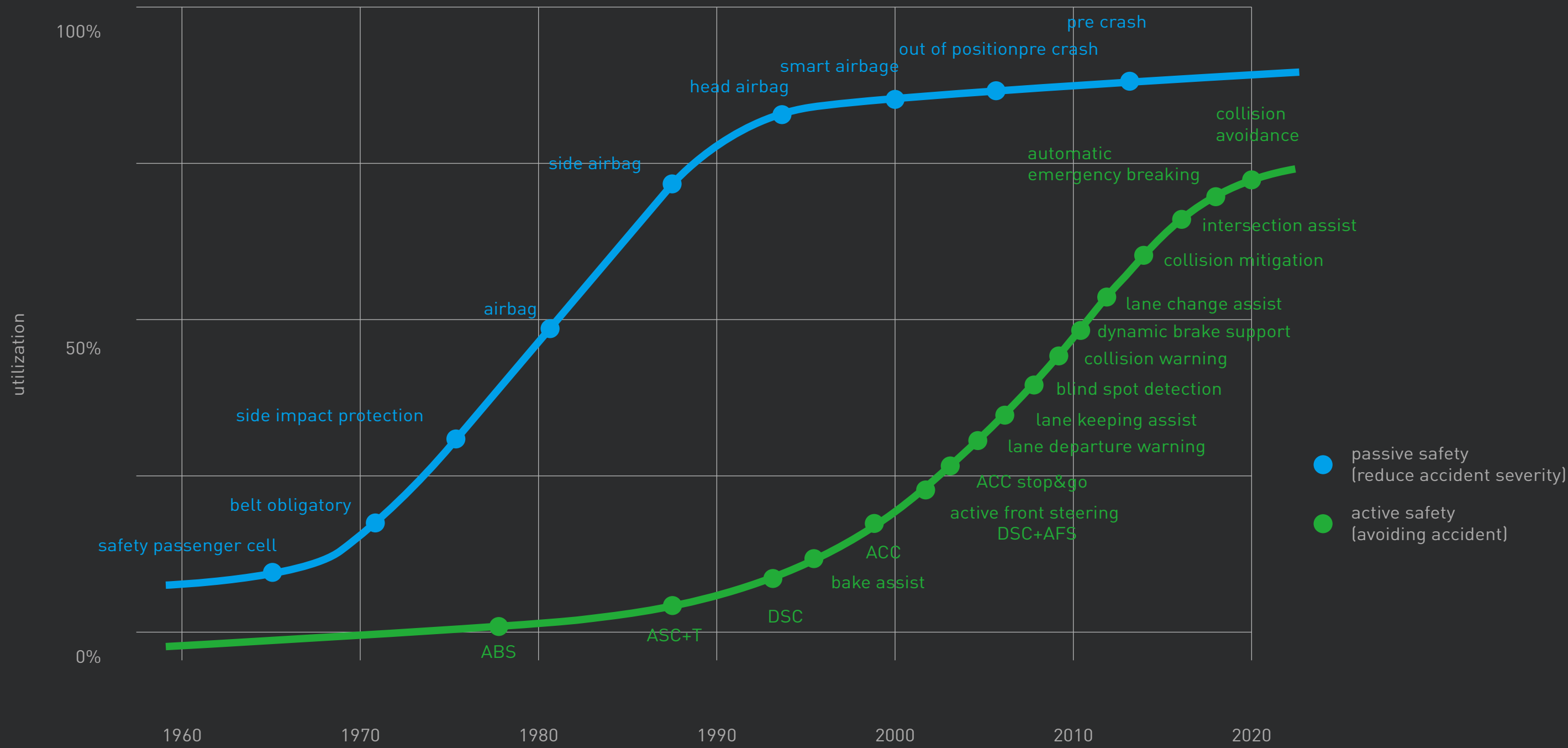
According to the "Global Report on Road Safety" made by the World Health Organization in 2016. We can know that the road traffic injuries are the tenth leading cause of death in the world. The current trend is clear. Without urgent action, by 2030 road traffic injuries will rise to the fifth leading cause of death in the world.



What is NEXT?

Data Research

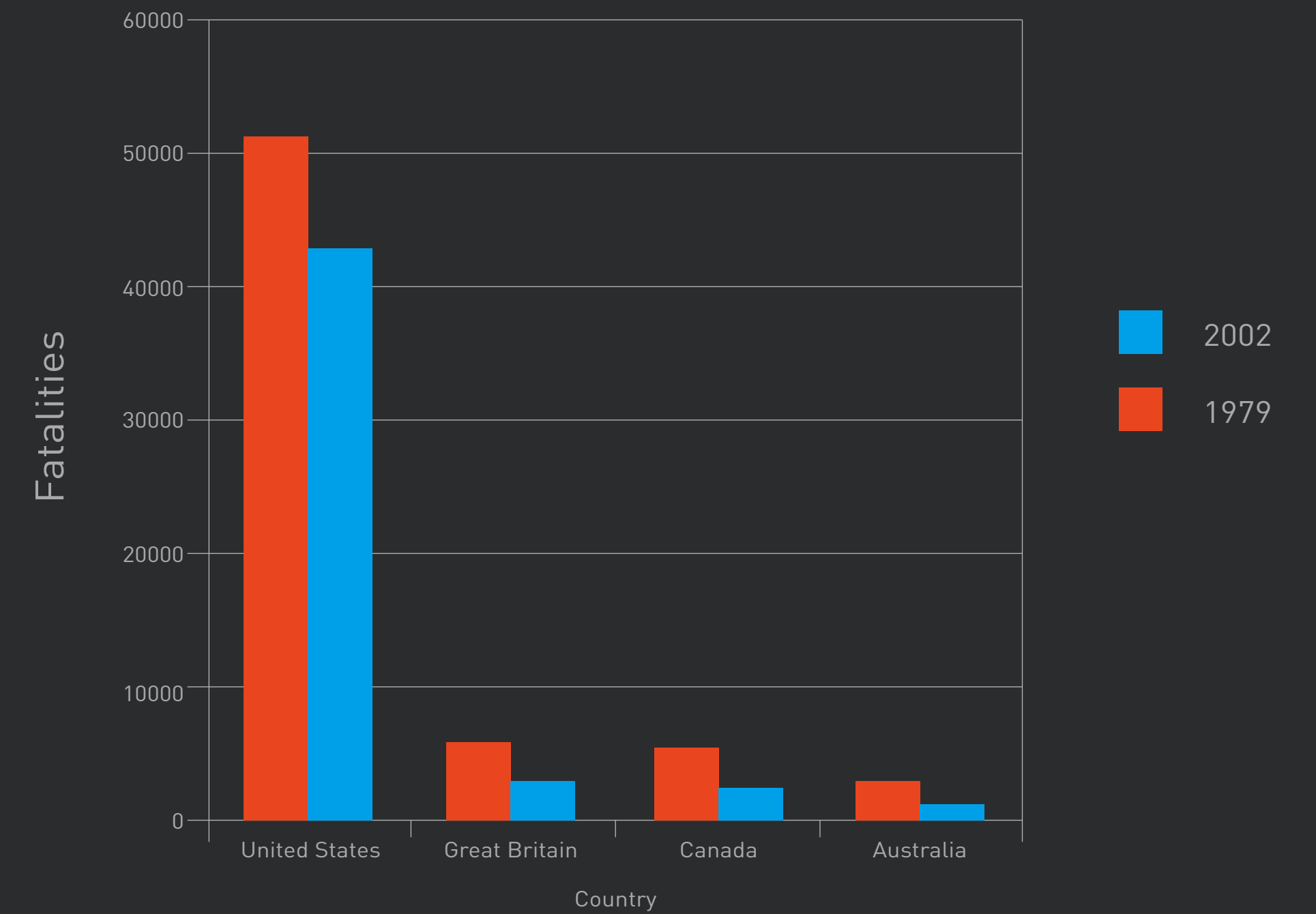
Passive Safety And Active Safety System of Development



EVALUATION OF VEHICLE SAFETY SYSTEMS: STATUS QUO AND FUTURE APPROACH - BMRGROUP

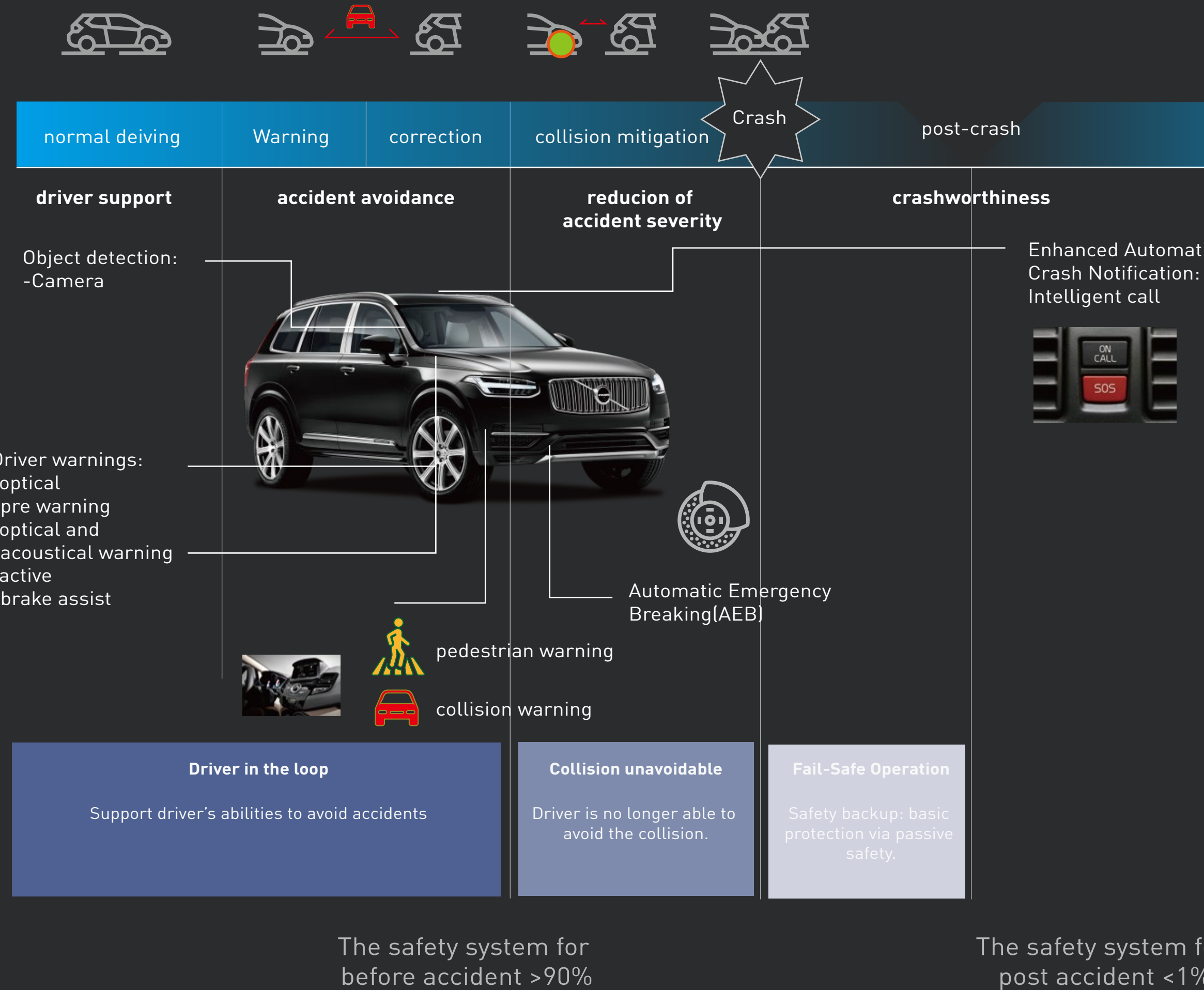
International Comparison of Change in Automobile Fatalities

1979-2002



Evans, Leonard (2004). Traffic Safety. Science Serving Society. ISBN 978-0-9754871-0-5.

Data Research



	2010	2017
 Power/Economic	28%	32%
 Safety	25%	37%
 Design Stylr	43%	45%
 Price	46%	42%



MALACHI

MALACHI - User Interface

The system is comprised of a built-in, electronic system that connects to a robot in the rear of the vehicle. In the event of an accident, MALACHI will assist in launching a warning balloon and dialing emergency-related contacts, including 911, roadside assistance, and the insurance company. The driver stays safe by never needing to leave the vehicle.





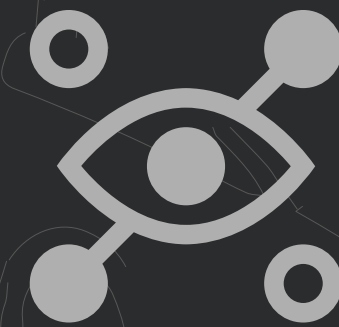
MALACHI - Robot

Because of the operation of GPS and infrared sensor, MALACHI knows where it is and where it should go. If there are large obstructions on the ground, MALACHI will automatically avoid it. MALACHI is user-friendly due to its built-in battery and unlimited Wi-Fi function, which will allow the robot and the car to maintain connection in all cases easily. Moreover, MALACHI is equipped with high-pressure gas; thus, the warning balloon can be completely filled in only 60 milliseconds.

Aim of Design



Increase Safety



Enhance Visual Perceiving



Improve V2V

All vehicle

MALACHI safety system is for all future vehicles from Lv.2 to Lv.5.



Taget

MALACHI is targeted towards every vehicle and every driver. Nobody wants to be involved in a traffic accident, but we cannot control when it would happen. If it does, drivers probably want to resolve as quickly and safely as possible.

People involved in accidents do not every driver wants to avoid any traffic accident and other related troubles, so they want to get a safety vehicle.



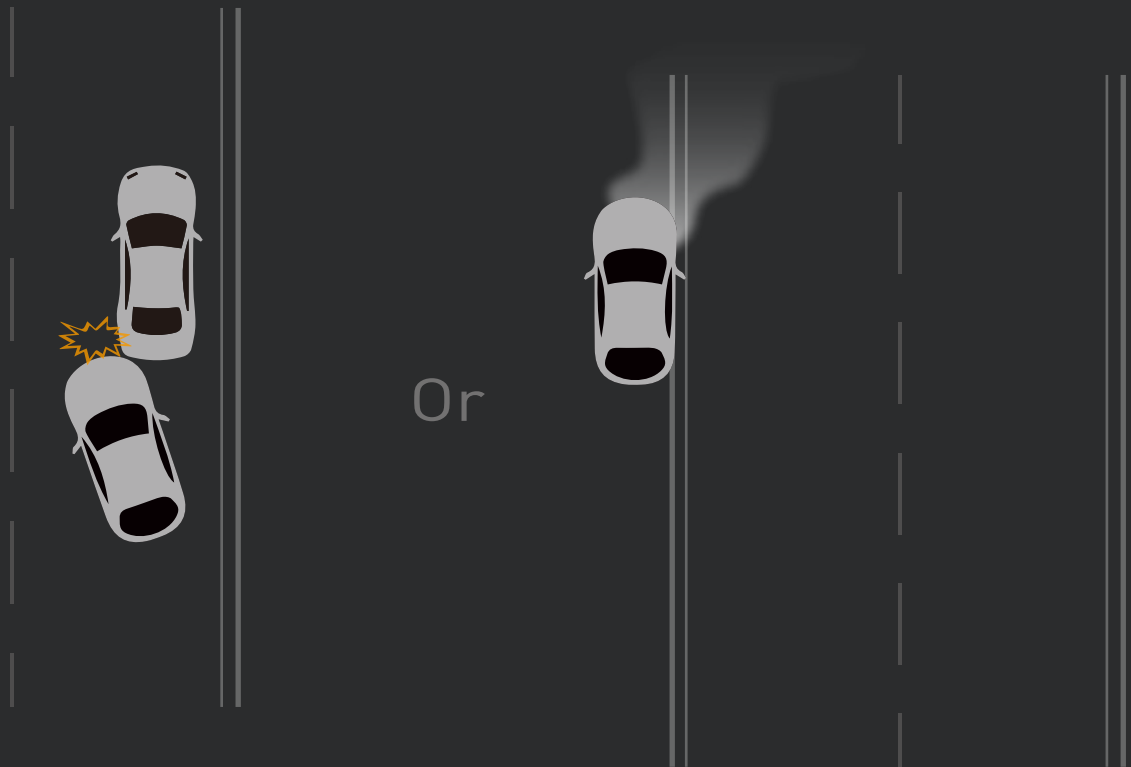
MALACHI - Robot View

Accident

Car Crash

Breakdown

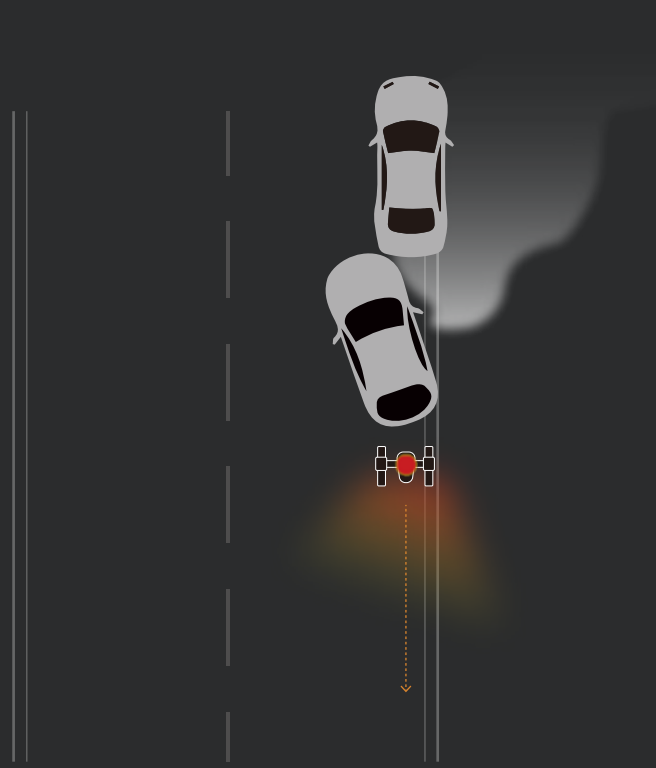
Or



MALACHI Use Direction

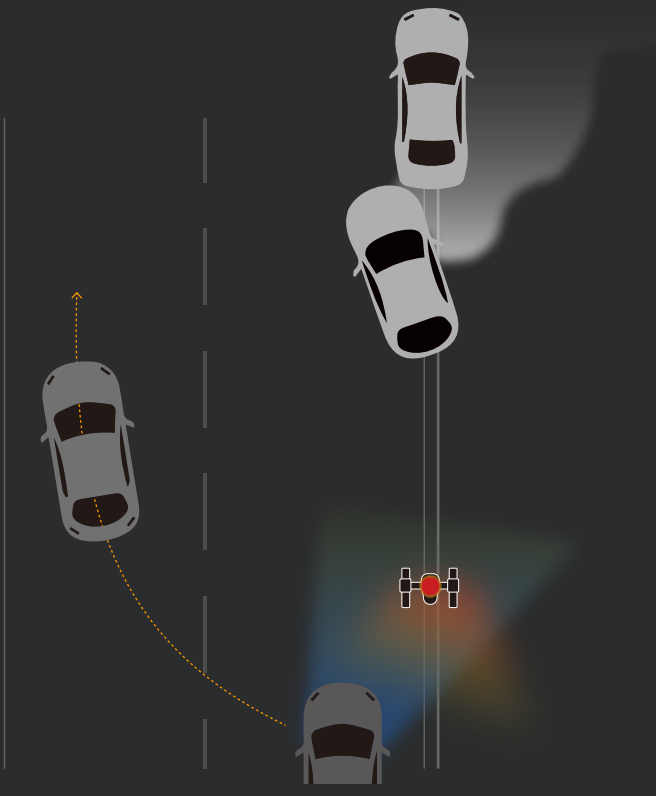
Step 1

Launch the MALACHI robot, which will go to the right destination. Driver does not need to leave car.



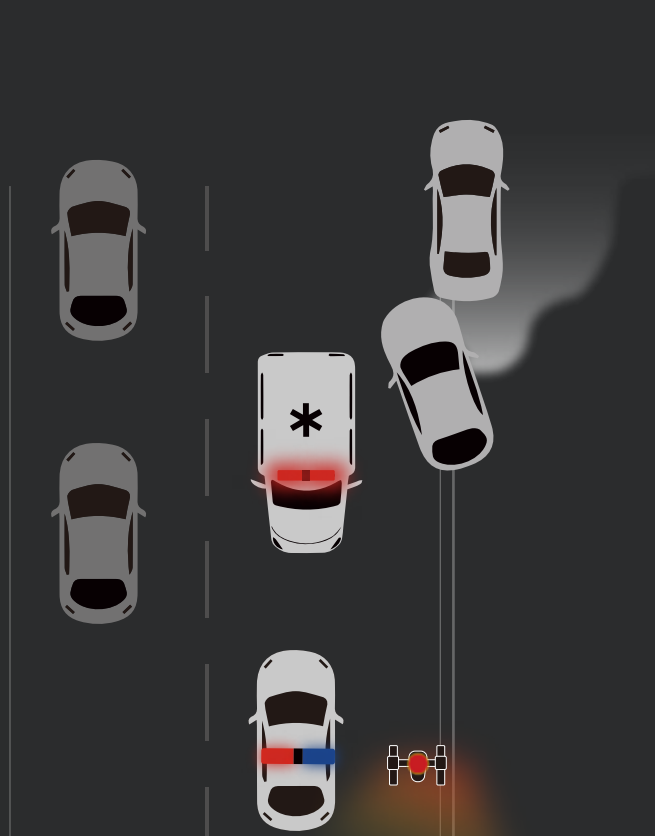
Step 2

The MALACHI robot and balloon can easily be seen by other drivers.



Step 3

MALACHI can help people make the right rescue call quickly, avoiding rescue delays. If the crash is severe and the airbag inflates, the system is automatically launched.



MAIN FEATURES



Avoid Secondary Accidents

The system is comprised of a built-in, electronic control unit that connects to a robot in the rear of the vehicle. In the event of an accident, MALACHI will assist in launching a warning balloon.



Simple operation

User will love the simplicity of implementing and managing MALACHI system.



AI support system

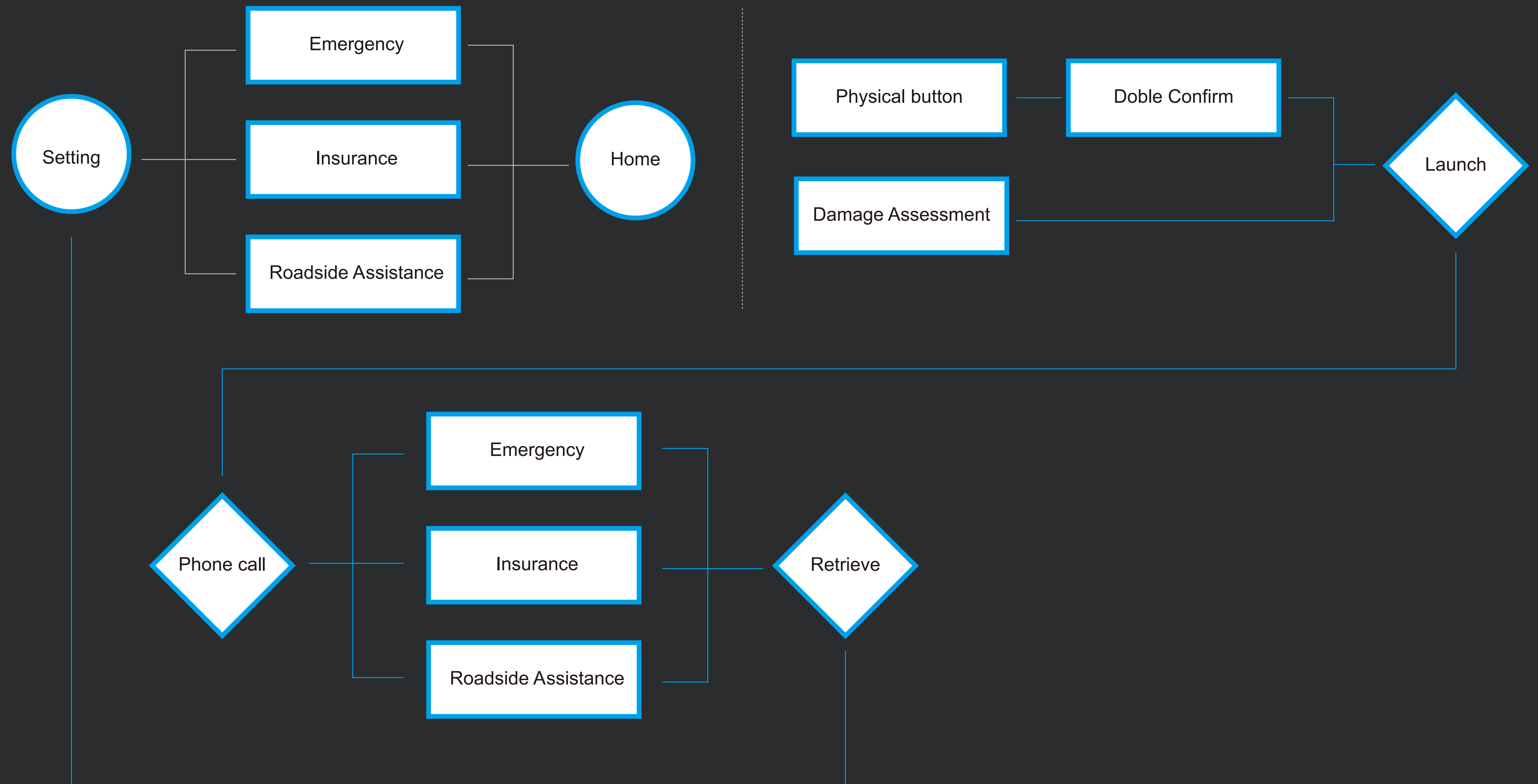
The aim of the AI techniques embedded in an intelligent decision support system is to enable these tasks to be performed by a computer, while emulating human capabilities as closely as possible.



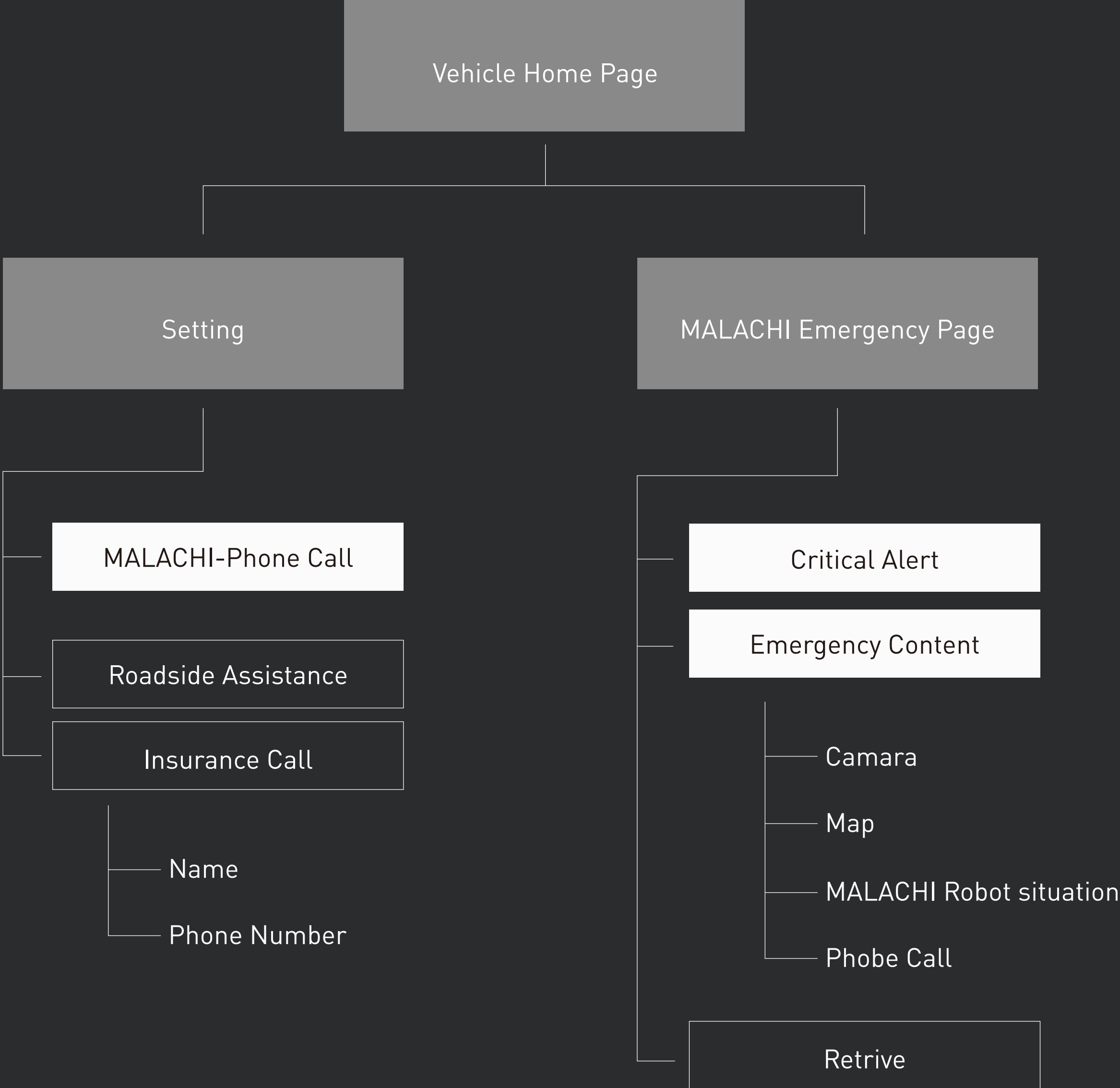
Quick help

Dialing emergency-related contacts, including 911, roadside assistance, and insurance company. The driver stays safe by never needing to leave the vehicle.

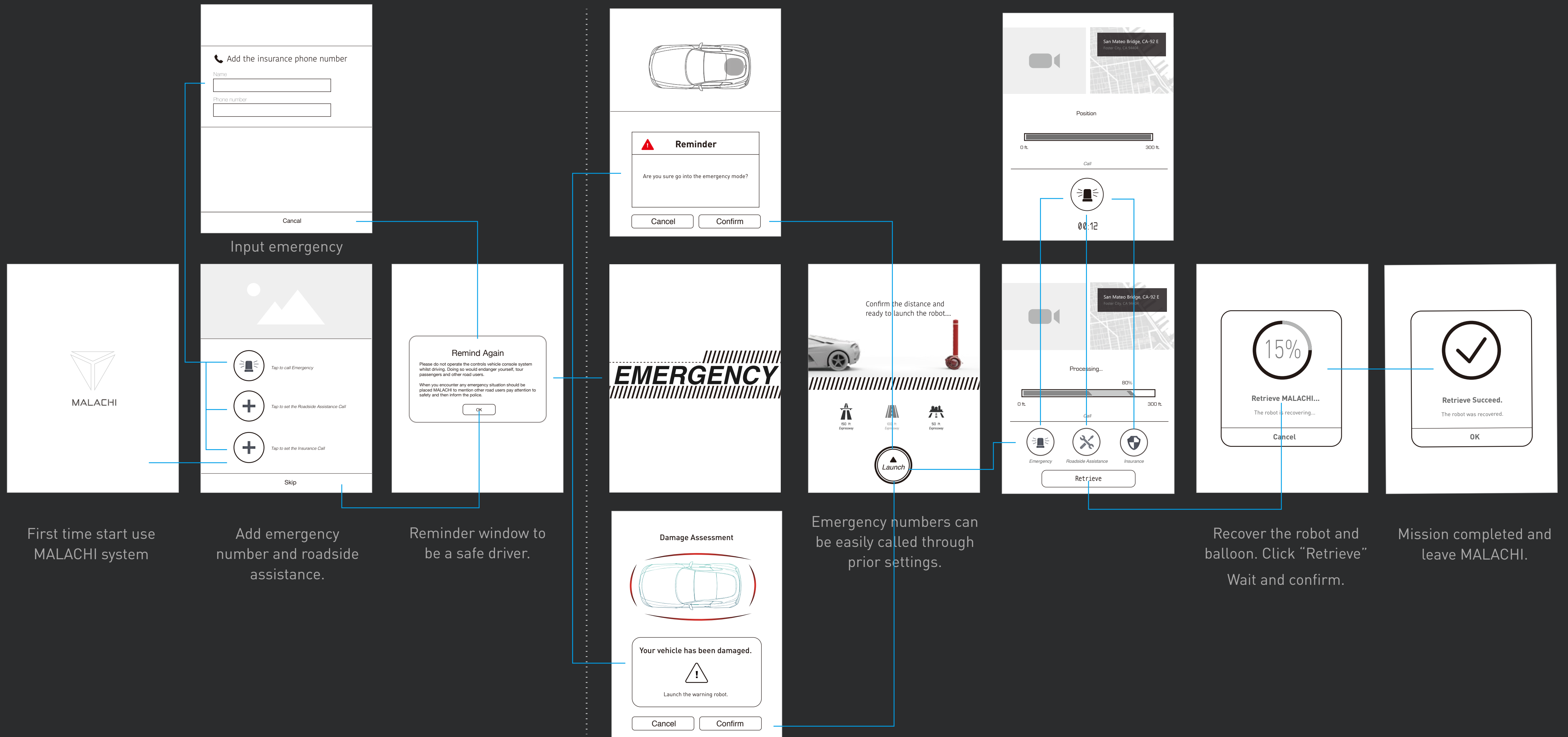
Interaction Map



Information Architecture



Wireframe

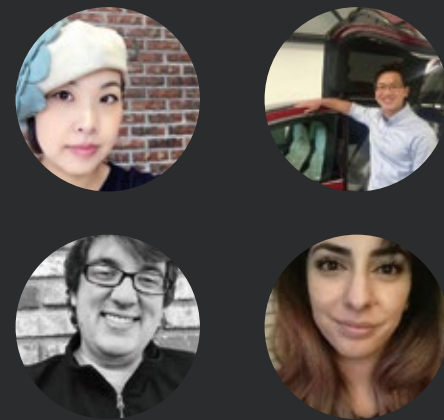


User Testing



ASK

1. When you involve a car accident what would you wab to do?
2. Is any idea better than the tradition warning triangle?
3. Do you think the early MALACHI concept is helpful?



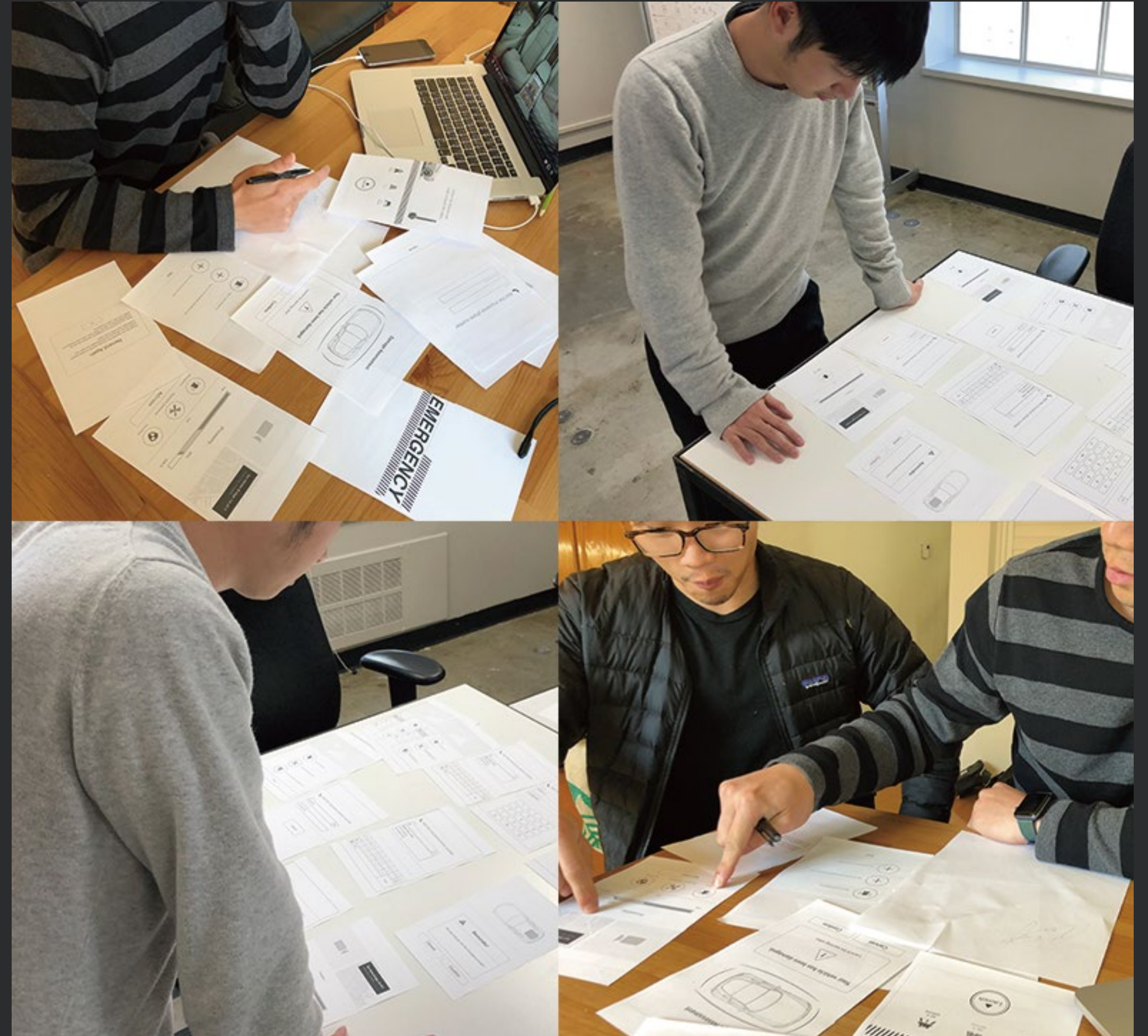
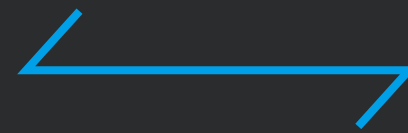
USER STUDIES FEEDBACK

1. Should upgrade the vehicle safety system
2. How can I find someone can really help me?
3. I think when people involve an accident no one know which way is correct process because all process are dangerous.



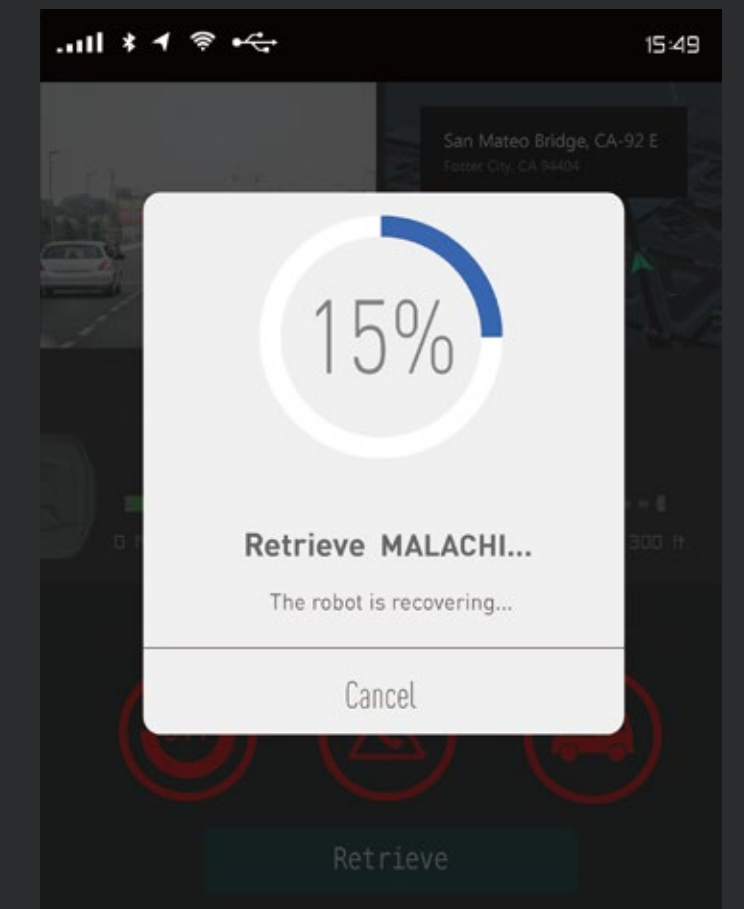
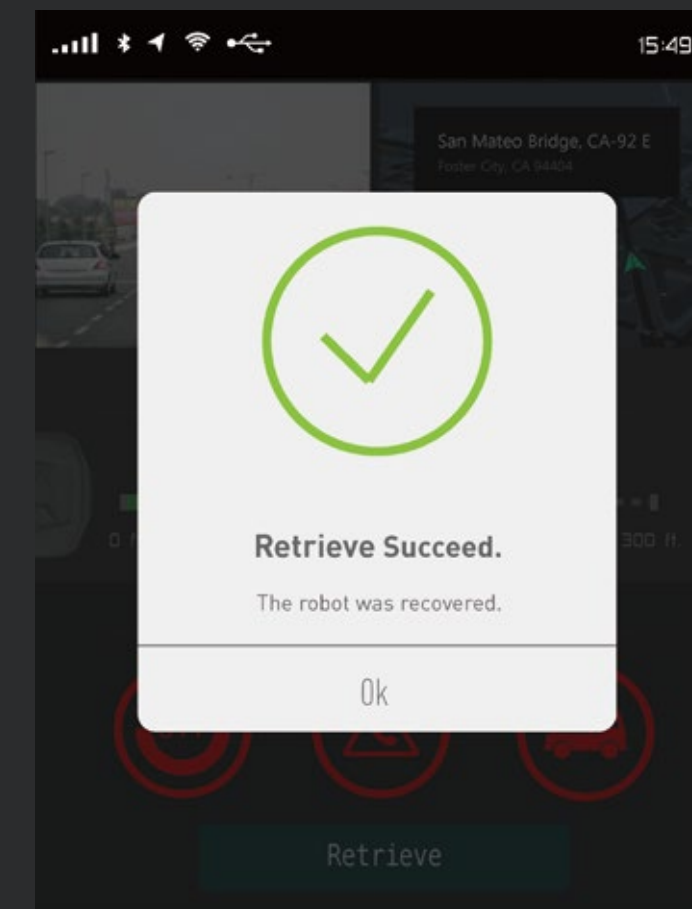
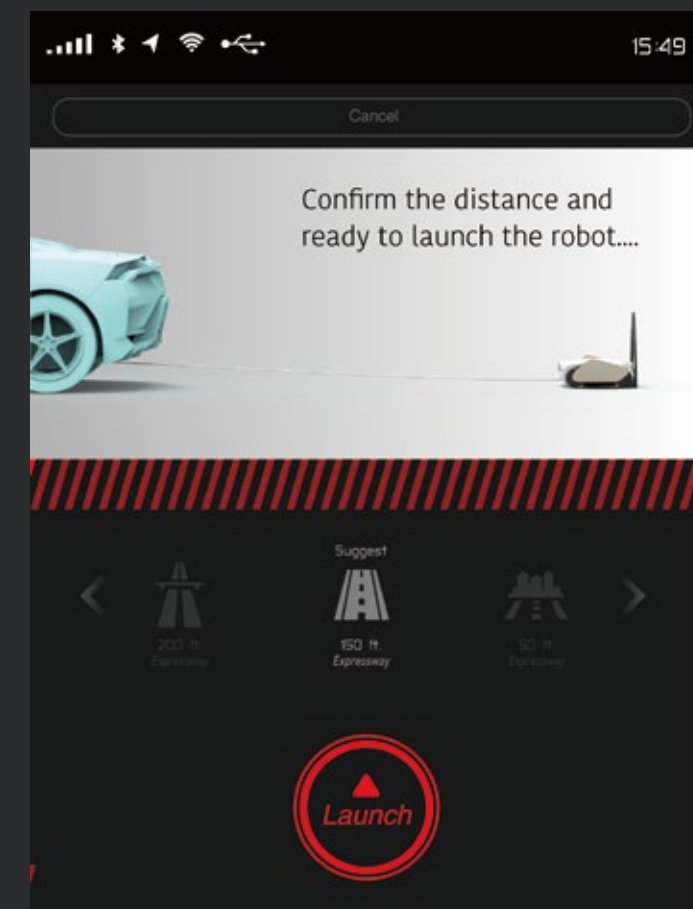
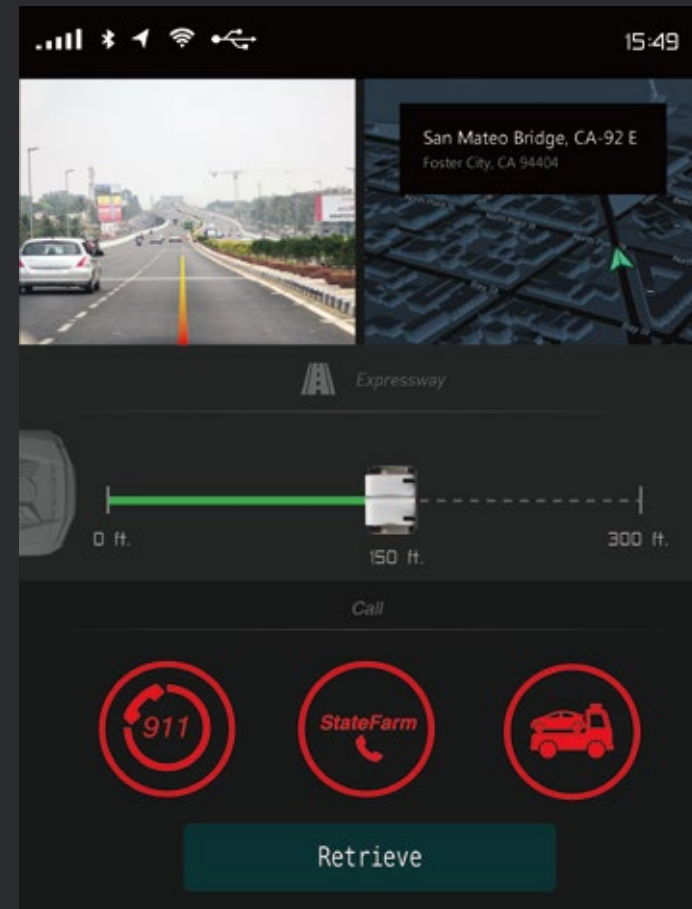
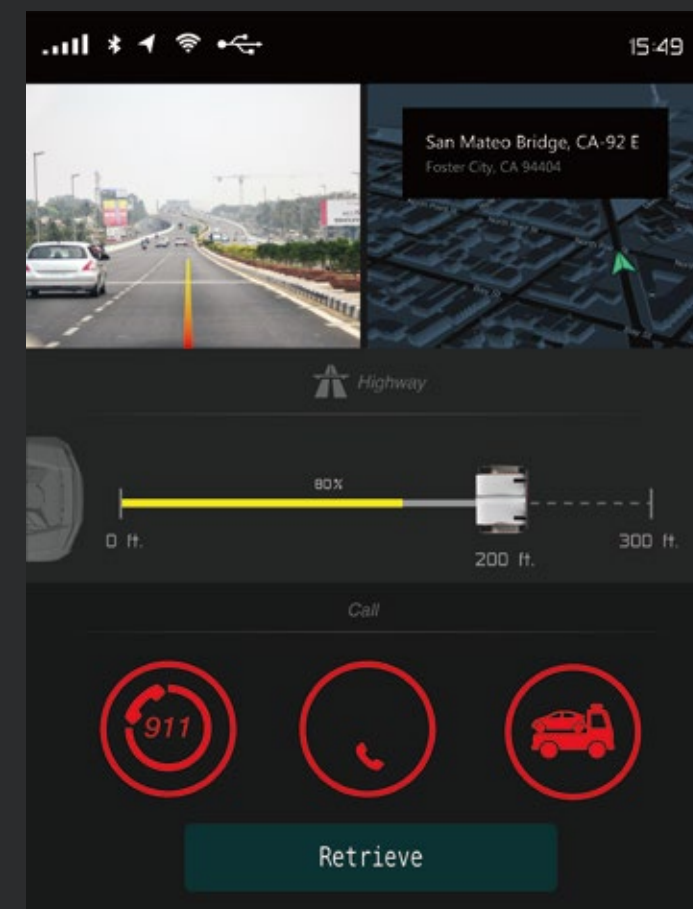
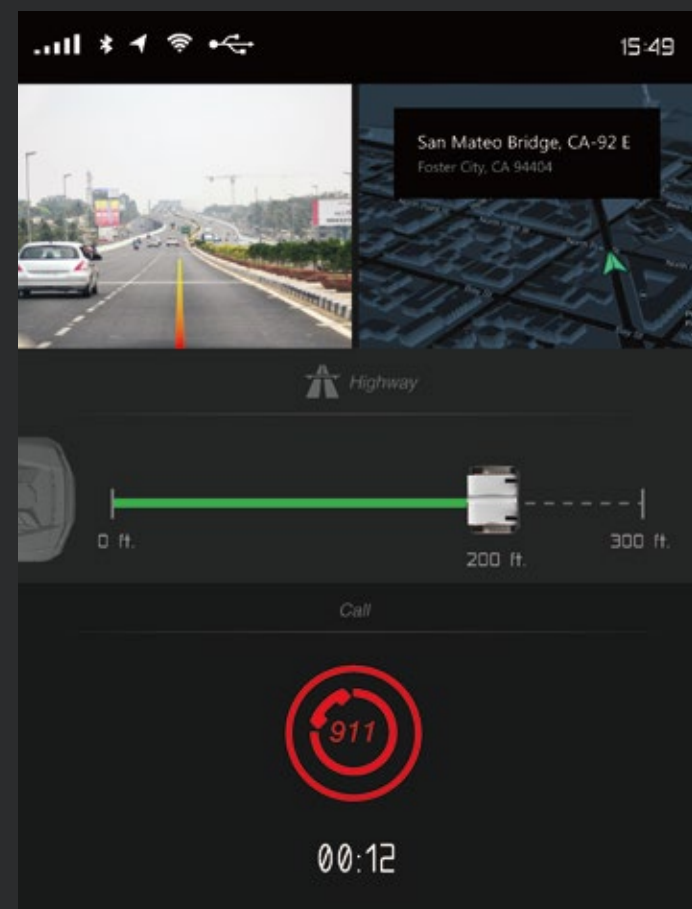
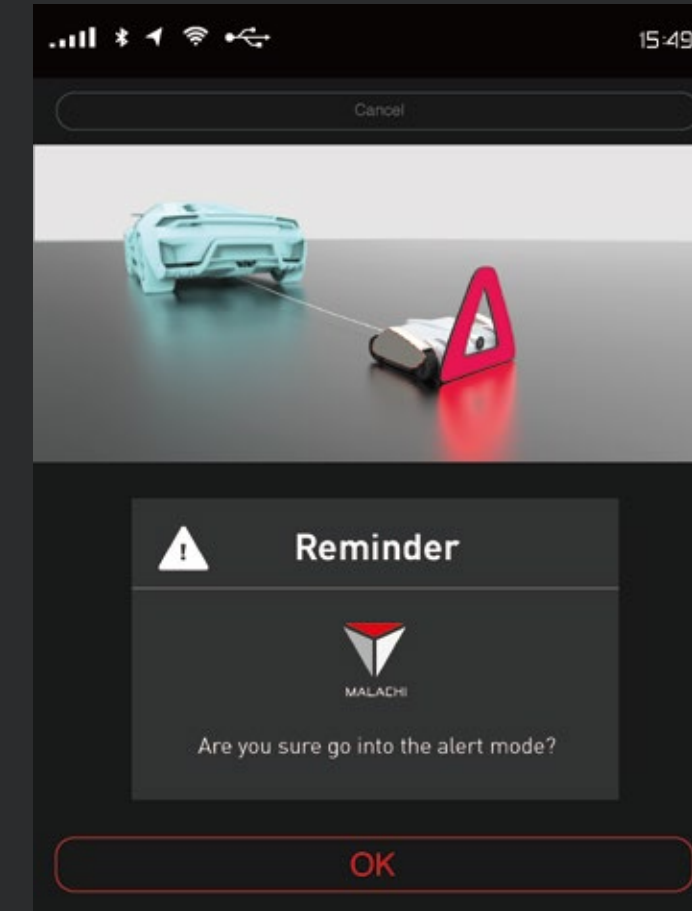
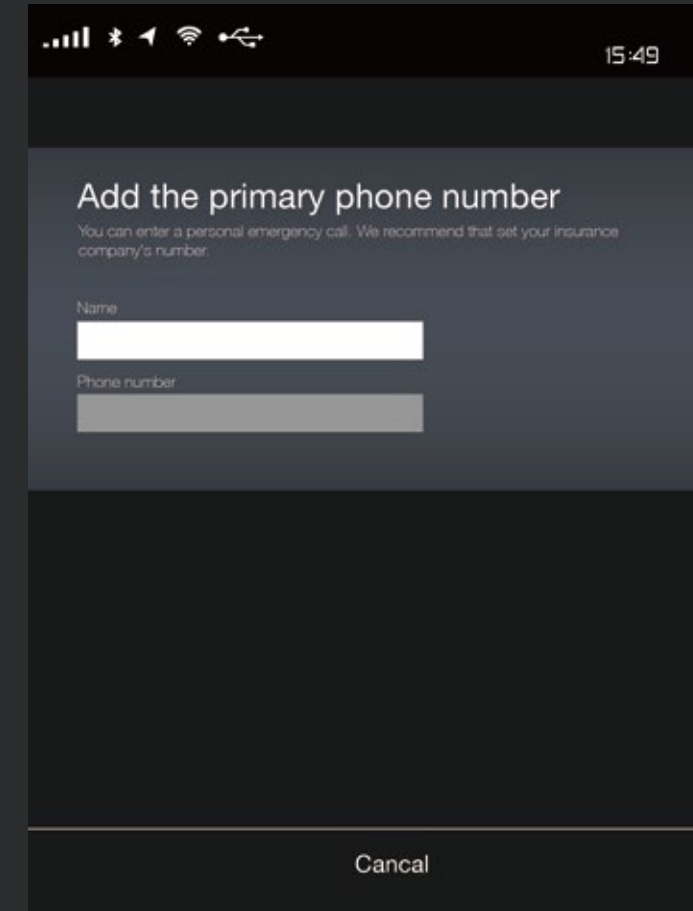
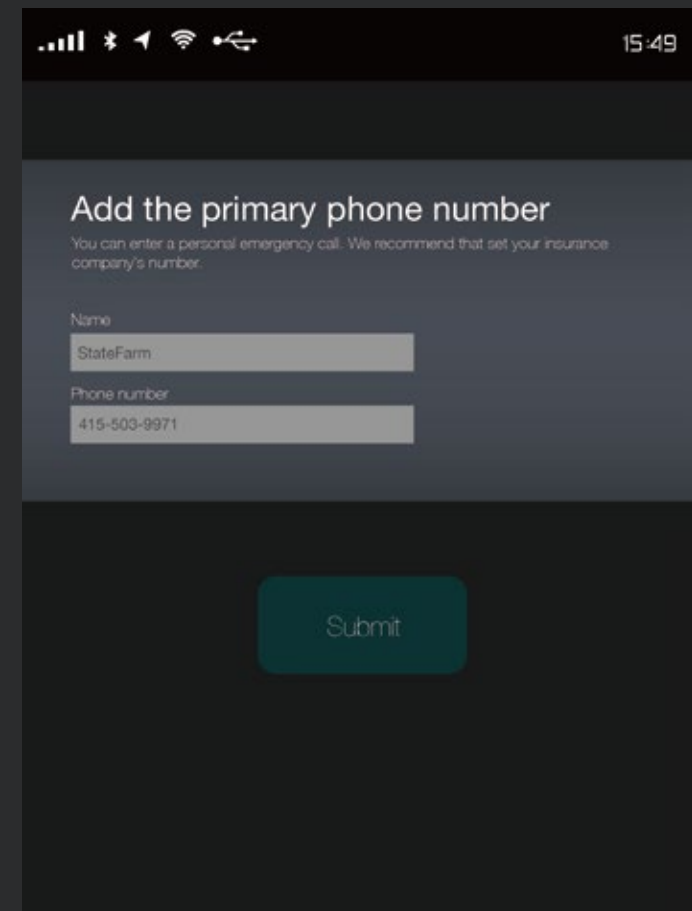
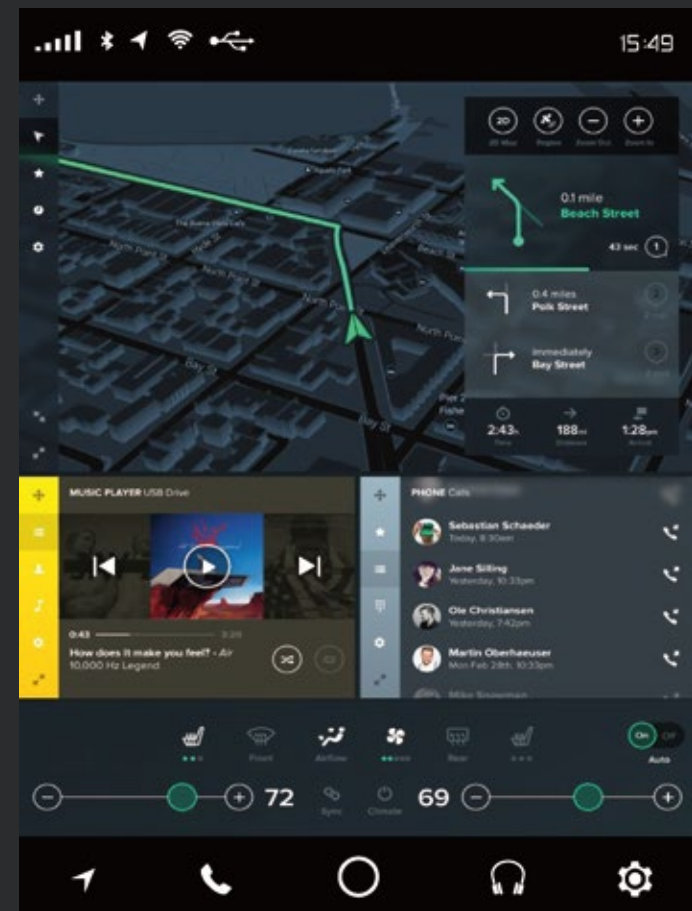
SOLUTIONS

1. Keep MALACHI system idea an make the clear prototype to test.
2. Make the wireless product which can help people when they involve an accident.



Design Evolution

High-fidelity digital prototype V1

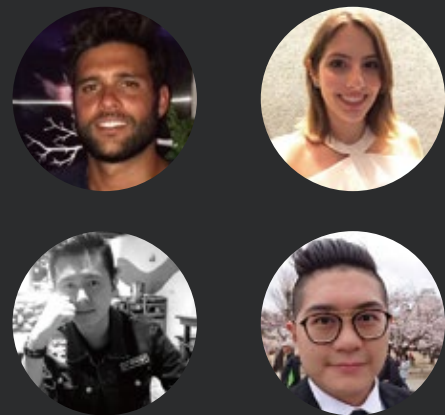


User Testing



ASK

1. If the vehicle has a AI can help you to resolve car the secondary accident do you think that can really help?
2. Do you think any other divces will help, such as drome, robot or something like signal flare?



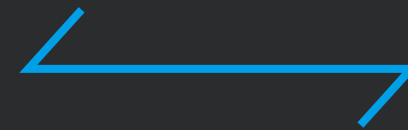
USER STUDIES FEEDBACK

1. How do visuals relate to the vehicle safety system?
2. The system UI should be vary clear to use
3. Maybe robot is a batter way.
4. All people agree that AI will be a better solution.



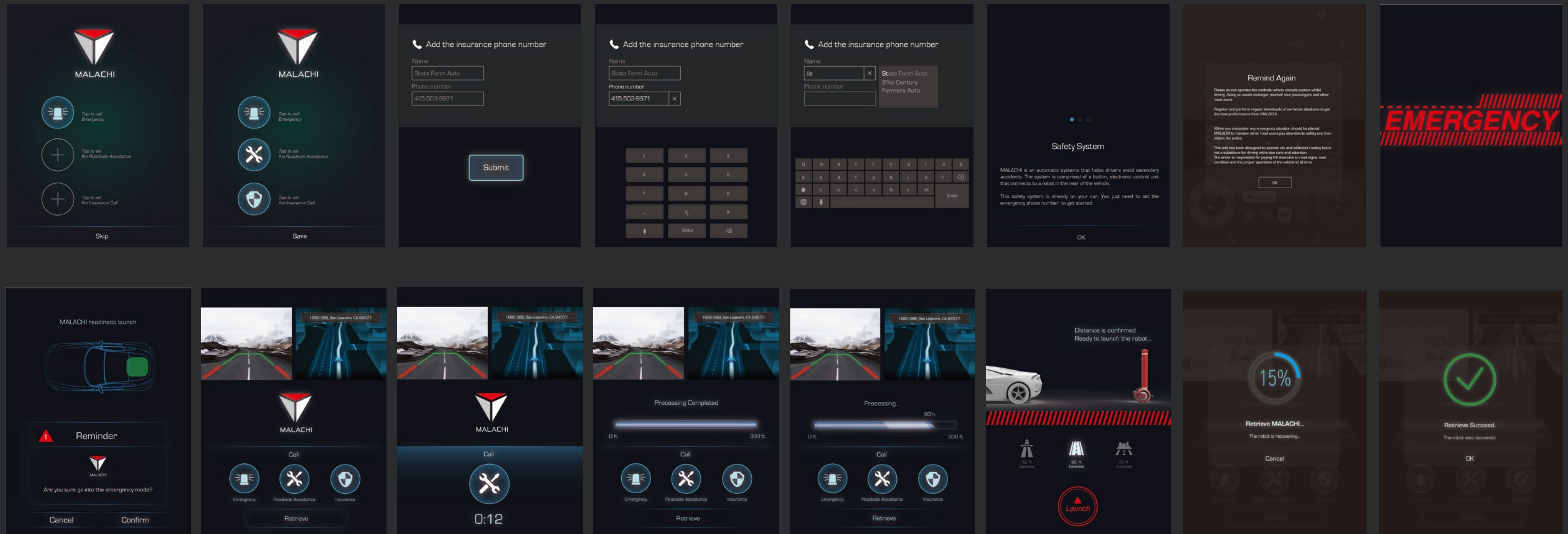
SOLUTIONS

1. Keep a good balance between visual expression and science messages.
2. Vehicle to Vehicle
3. Explain the feedback of this system.



Design Evolution

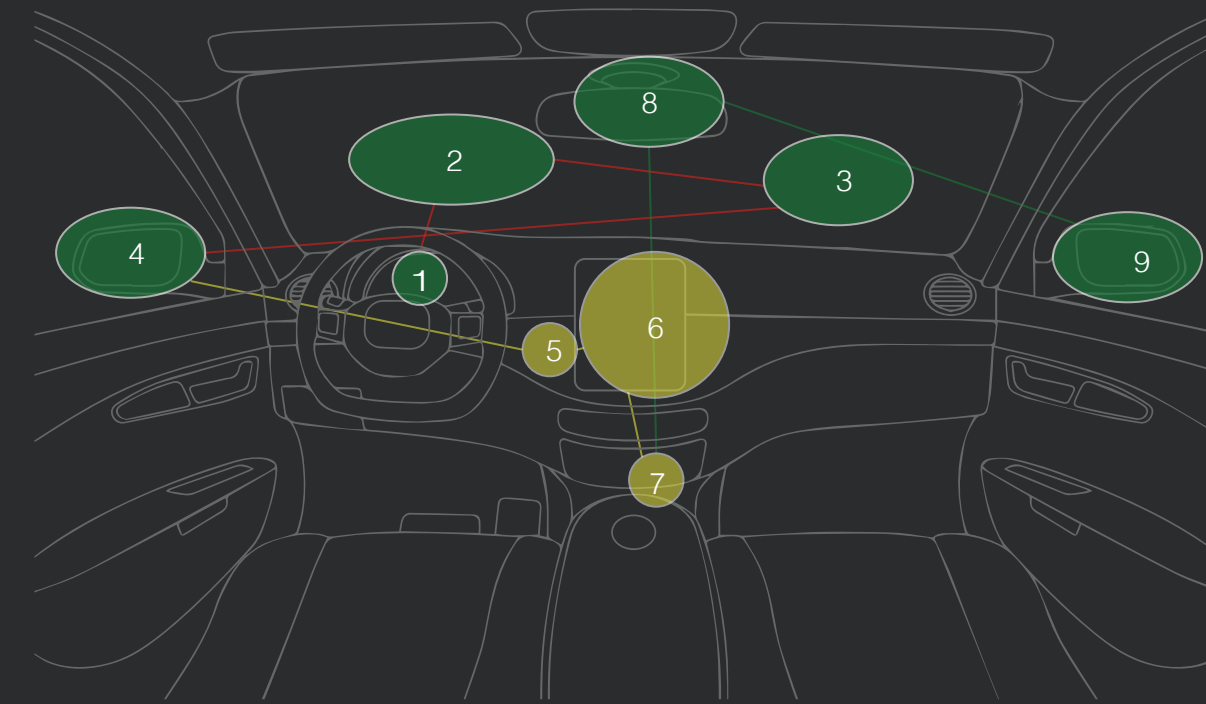
High-fidelity digital prototype V2



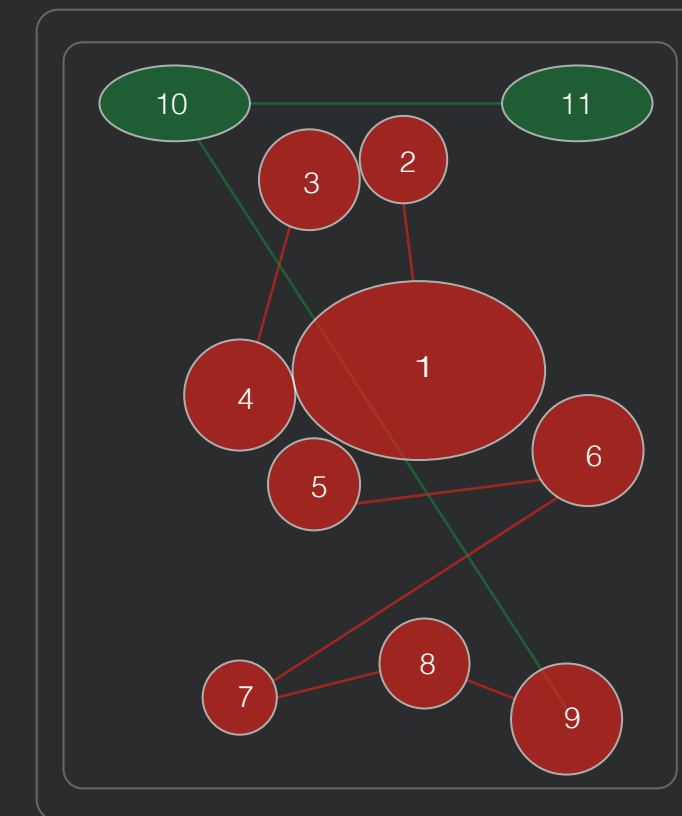
User Feedback

People need to alert other drivers when they have been involved in an accident. MALACHI's warning balloon and robot help prevent secondary accidents, and the distance of the robot from the car can be critical.

Sequence/Time Consuming



Interior Dashboard



Touch Screen

Time Required

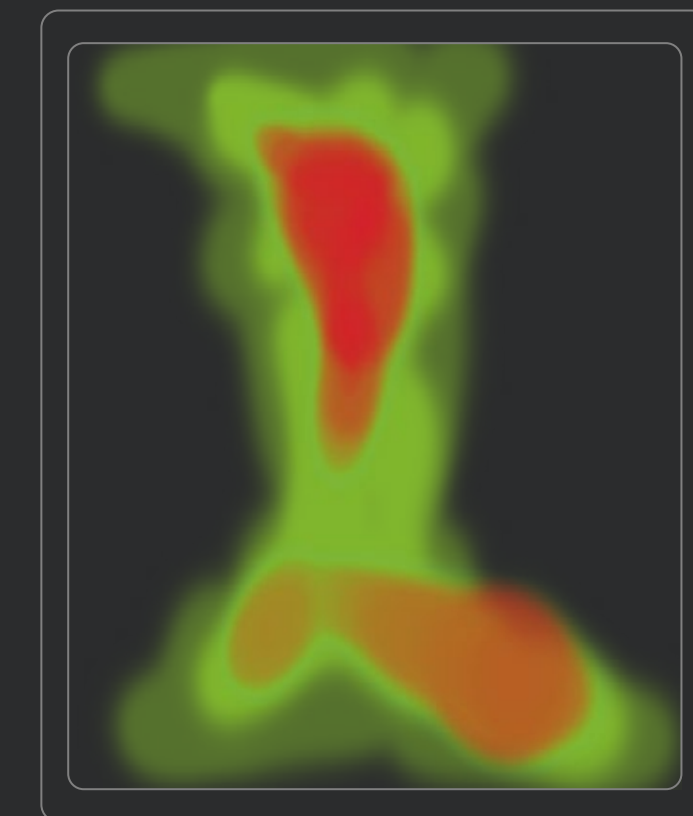
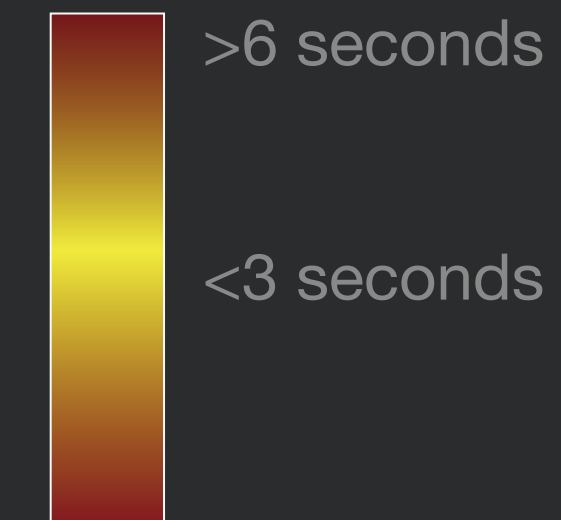
2.5

5.0

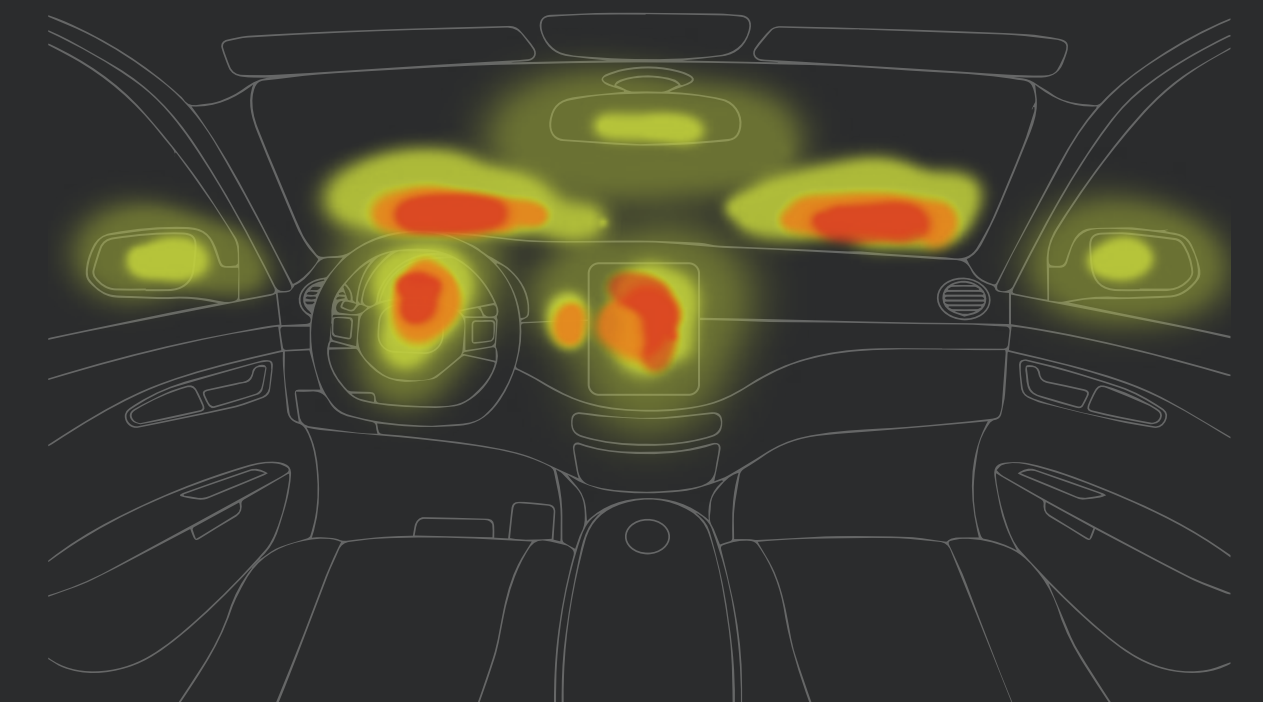
7.5

Unit: Seconds

Stay Time



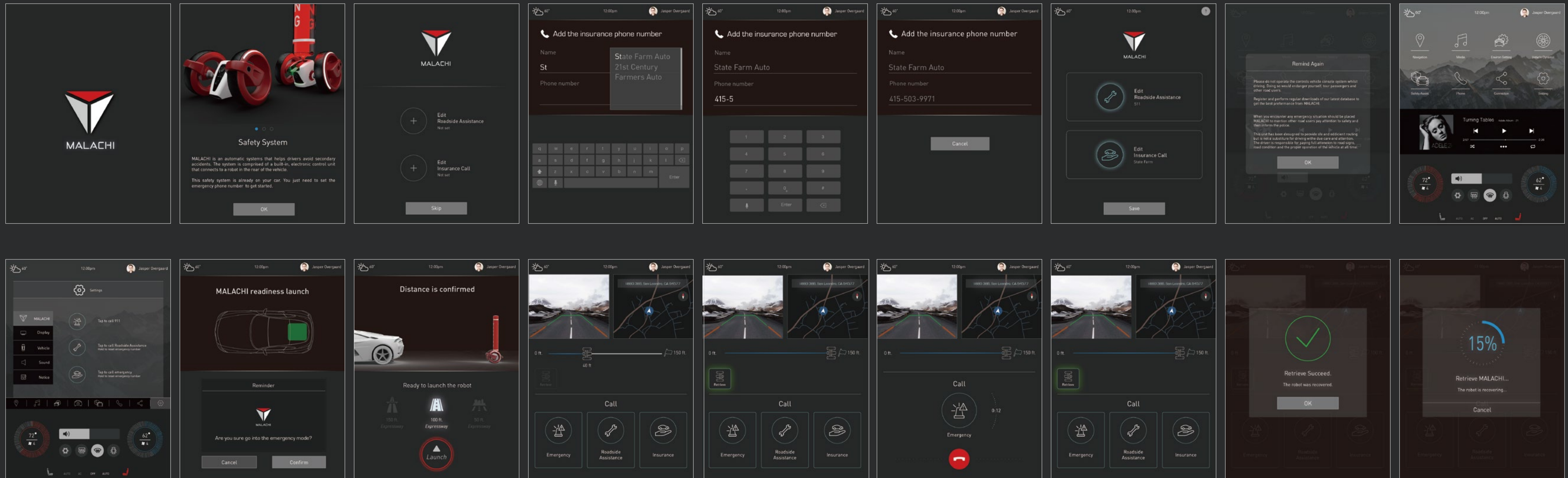
Touch Screen



Interior Dashboard

Design Evolution

High-fidelity digital prototype final

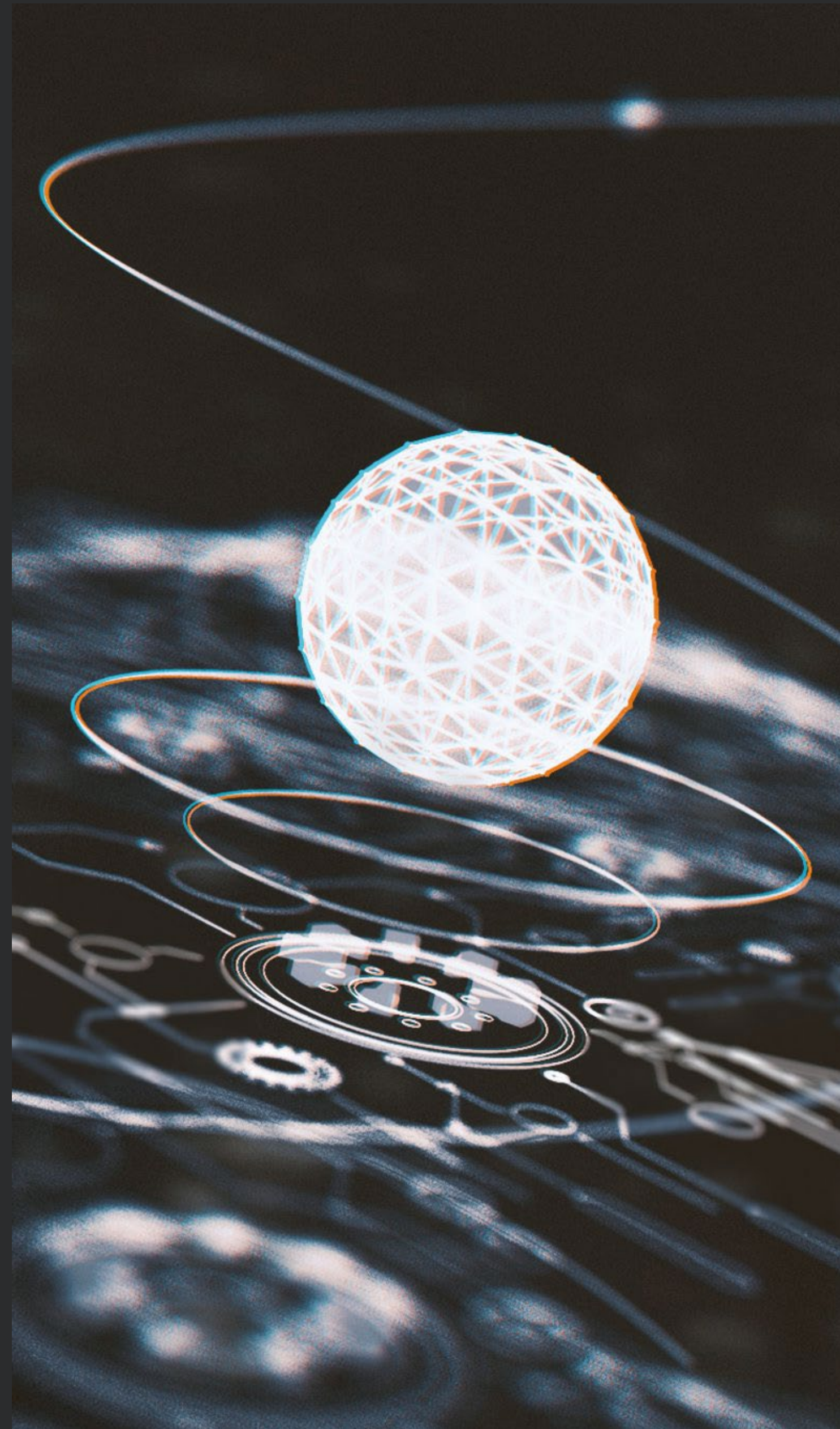


VISUAL DEVELOPMENT



Malachi:

Messenger or angel, the last of the minor prophets, and the writer of the last book of the Old Testament .
The New Revised Standard Version of the Bible
1:1 (Superscription)



VISUAL DEVELOPMENT

Logo



User Interface Color Palette

Core Color Palette



#231815

#777778

#f9faf8

Overarching Secondary



#2ba23a

#1f79b7

#d71718

Font



Sans serif, Base font

Physical Product Color Palette



#231815

#dbdad9

#e7231d

Personas 1

Gina, 30



NEEDS

- Ask for help
- Protect life
- Enjoy driving pleasure

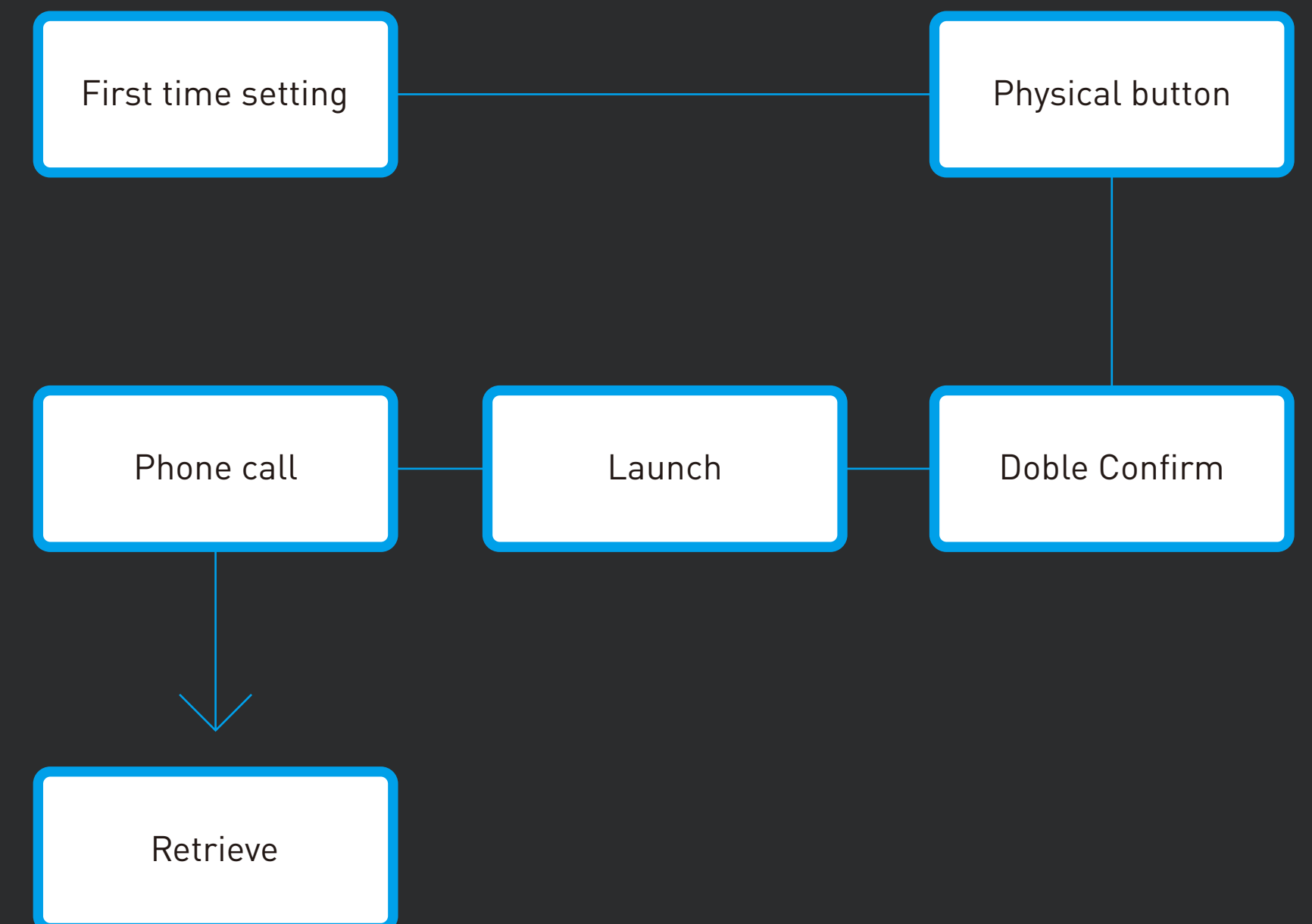
GOALS

- Someone will come to help
- Stay in the safe area
- To make driving without pressure

DEMOGRAPHIC

- Age: 30
- Location: South San Francisco, United States
- Tech Savvy: Medium
- Gear: Volkswagen Tiguan, Surface book, Galaxy S8
- Occupation: Lead UX Designer in Adobe Social SF
- Most Visited Road: Urban, Expressway

The car is a necessity for Gina. Even if she is not a car fan, but she always wants to be safe while she drives.



Personas 2

Tom,35



Tom has good driving experience and a good car, but he can not control others; they might hit him. He wants in the future to drive more safely.

NEEDS

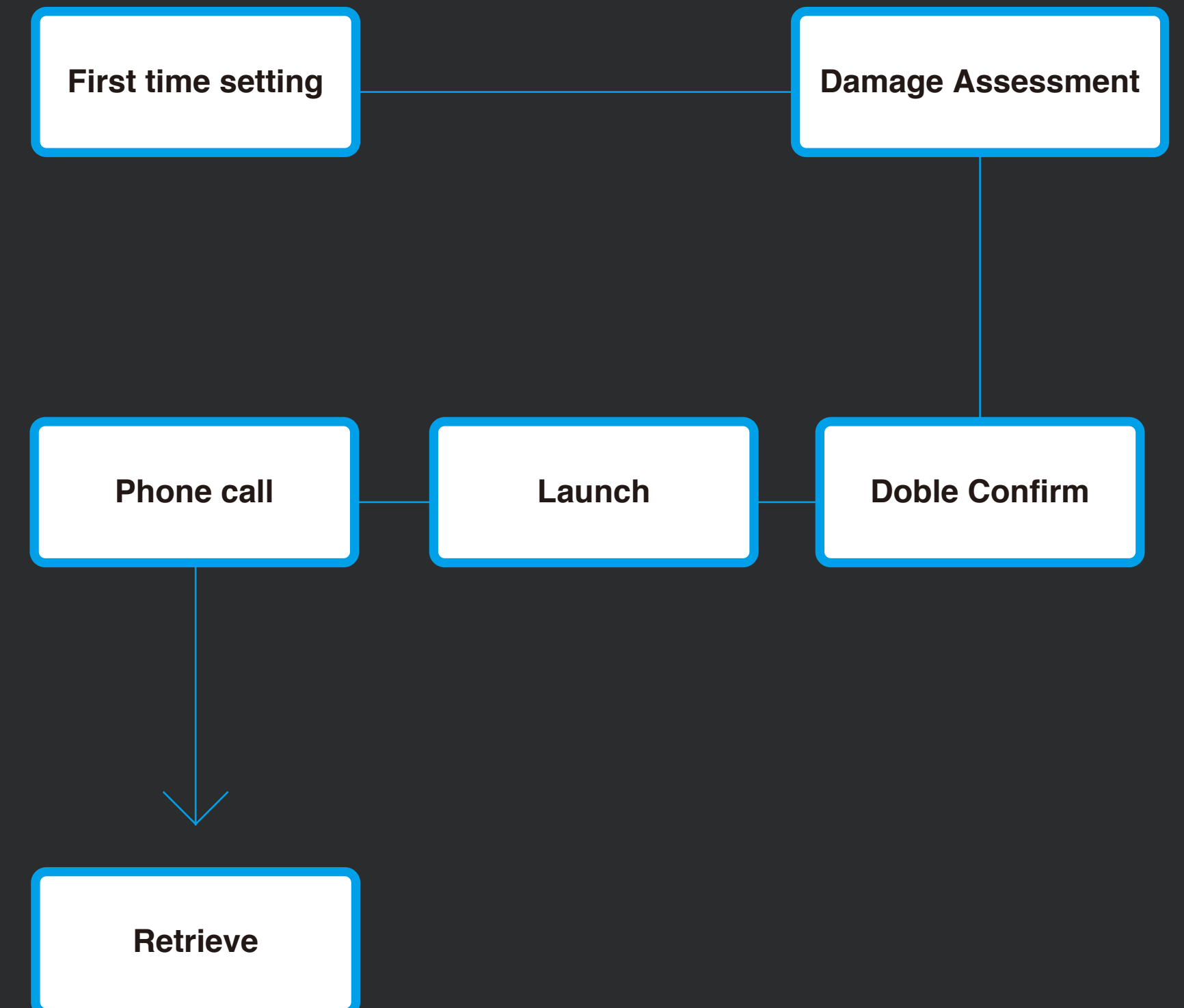
- Ask for help
- Protect life
- Enjoy driving pleasure

GOALS

- Someone will come to help
- Stay in the safe area
- To make driving without pressure

DEMOGRAPHIC

- Age: 28
- Location: San Francisco, United States
- Tech Savvy: medium
- Gear: Nissan leaf, iPad, iPhone
- Occupation: Graphic Designer
- Most Visited Road: Urban, Highway



Personas 3

Mike,40



Mike had been in a coma because of an accident. He wants in the future to have a system that can help him out of his predicament.

NEEDS

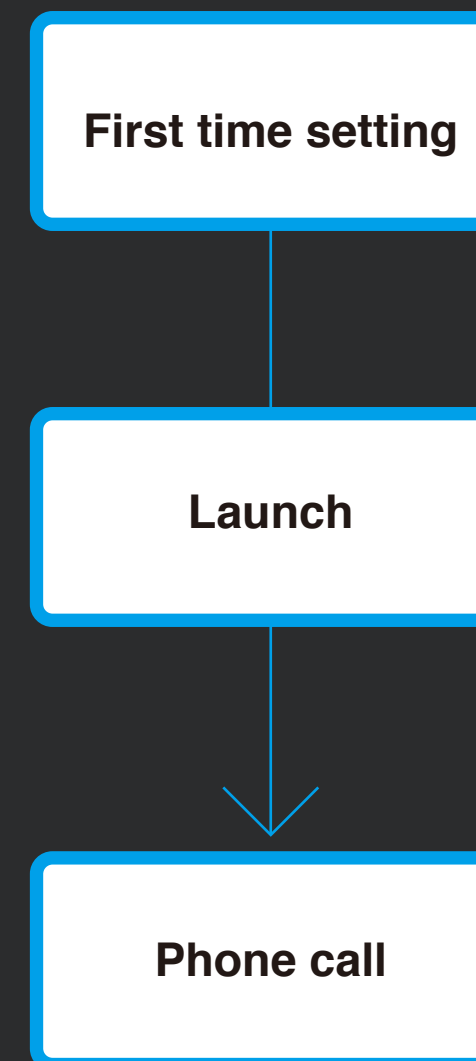
- Ask for help
- Protect life
- Enjoy driving pleasure

GOALS

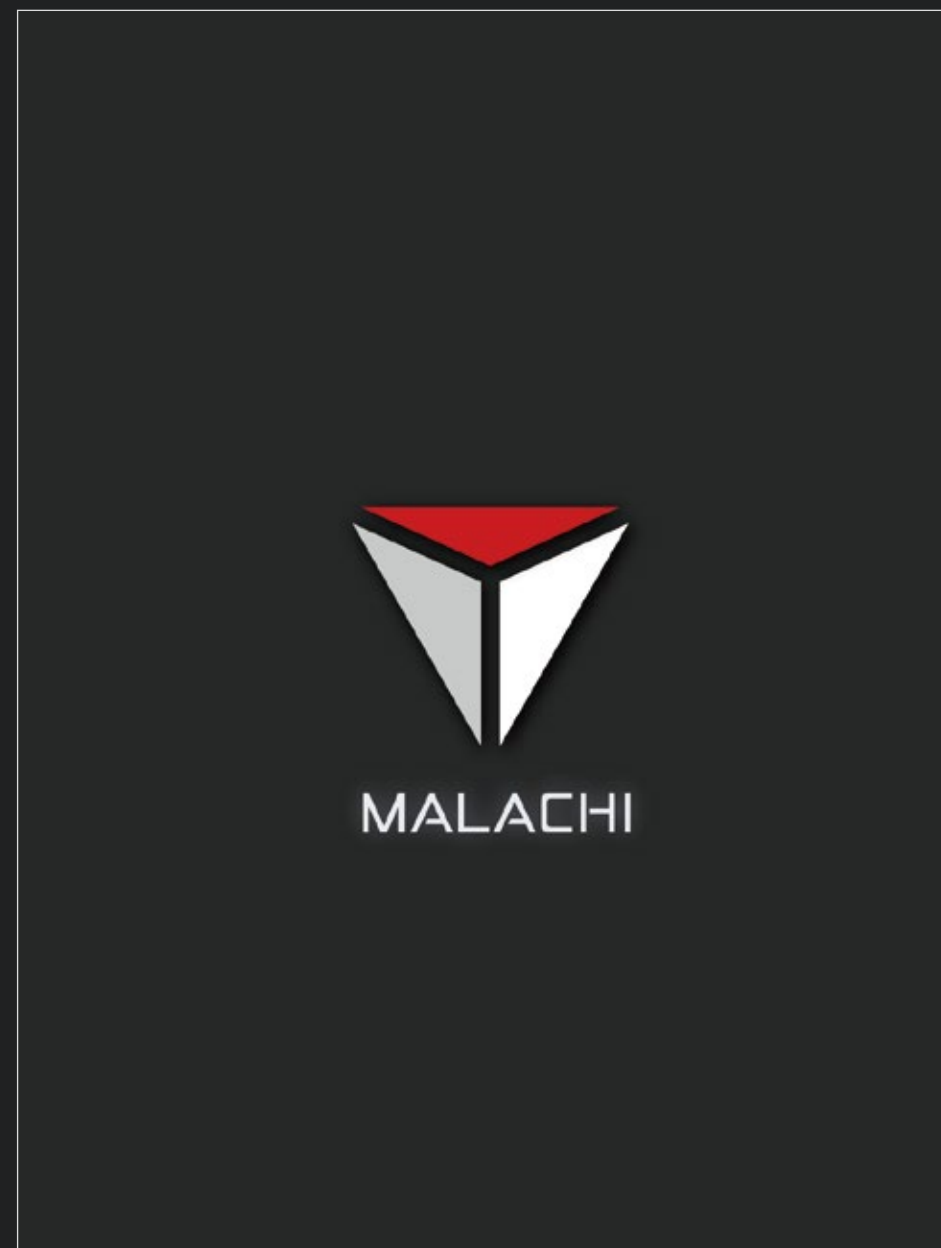
- Someone will come to help
- Stay in the safe area
- To make driving without pressure

DEMOGRAPHIC

- Age: 32
- Location: Portland, United States
- Tech Savvy: high
- Gear: Tesla model S, iPhone
- Occupation: Engineer
- Most Visited Road: Urban, Expressway, Highway



PROOF OF CONCEPT TASK Setting



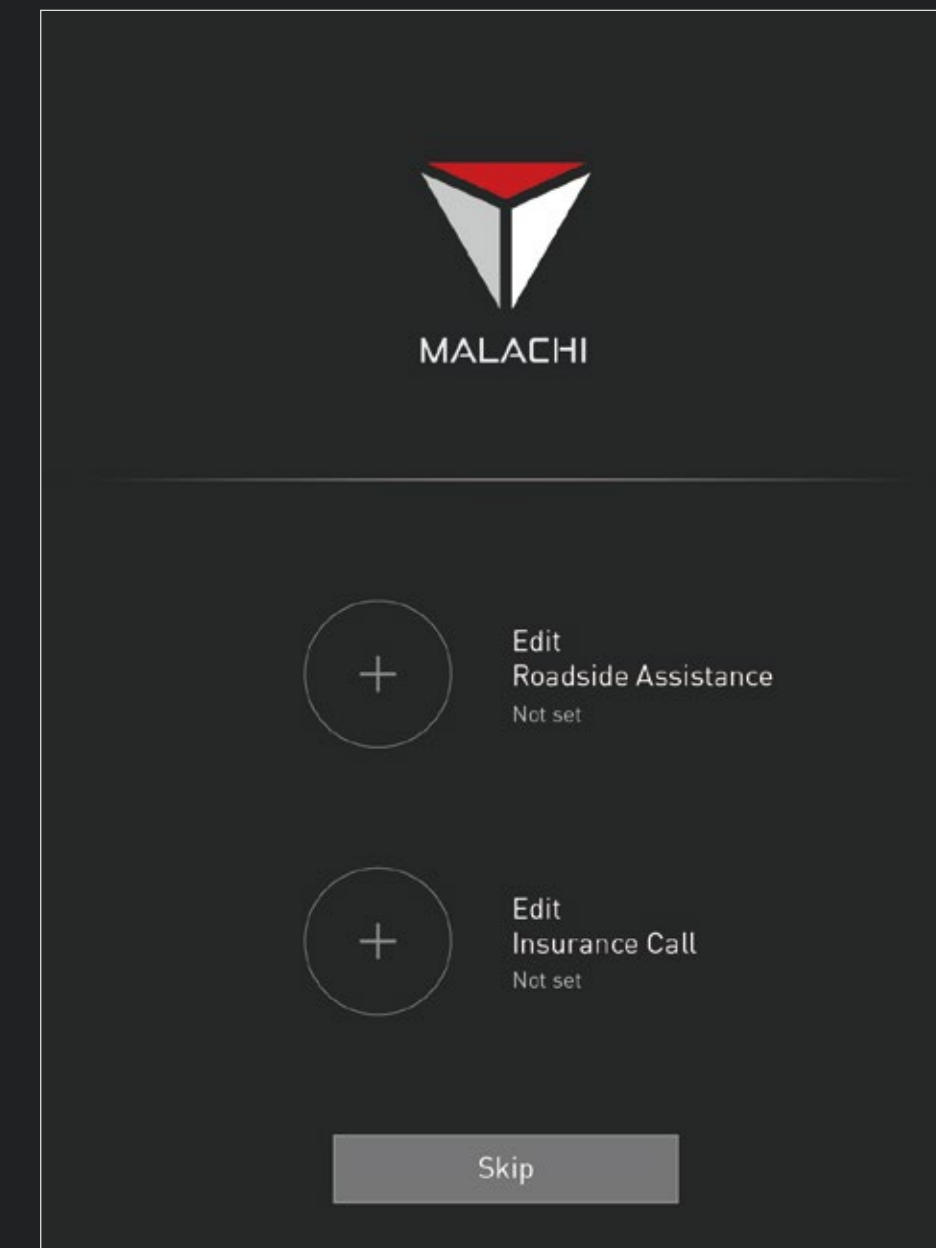
1/11

First time start use MALACHI system



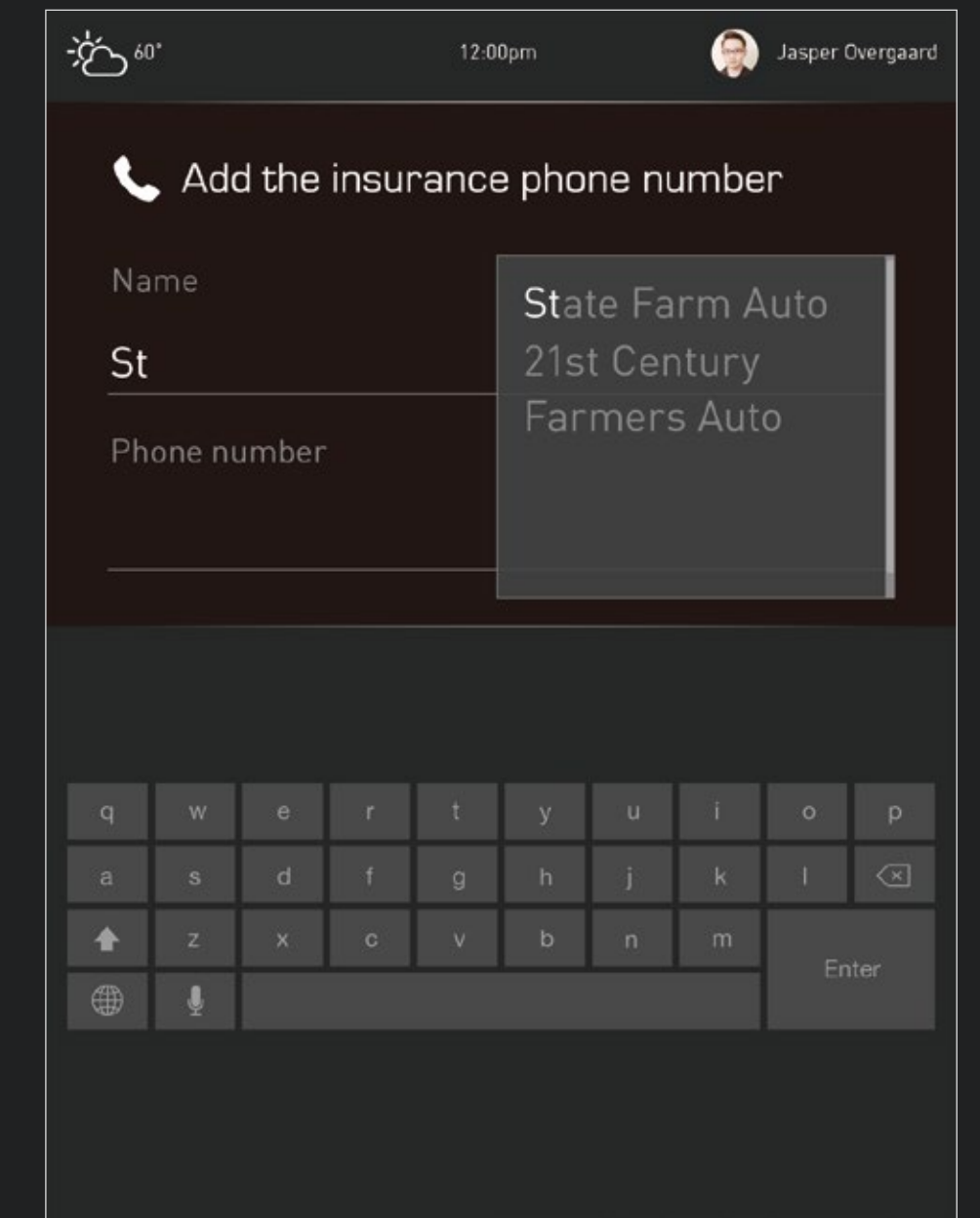
2/11

MALACHI system Introduction



3/11

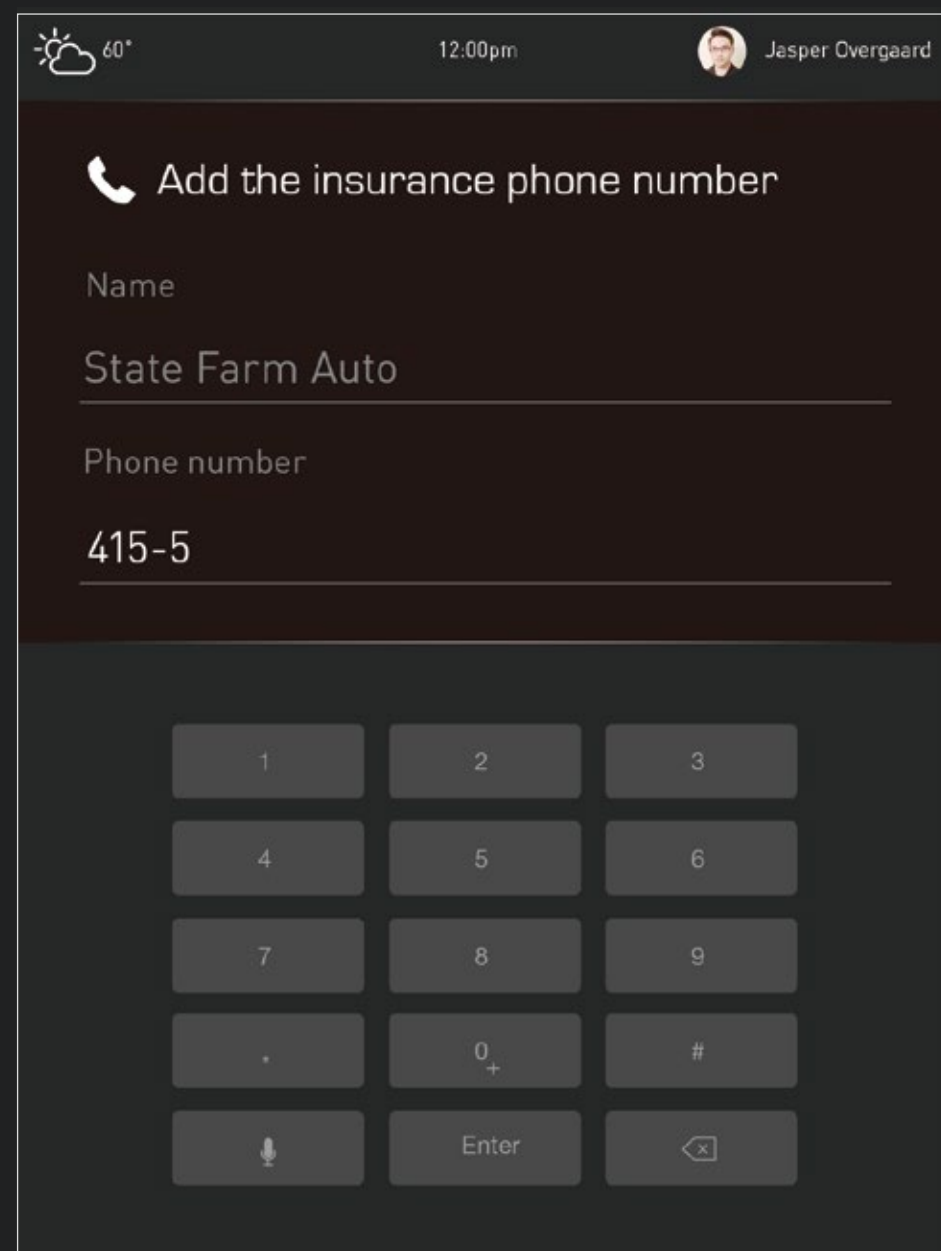
Add emergency number and roadside assistance.



4/11

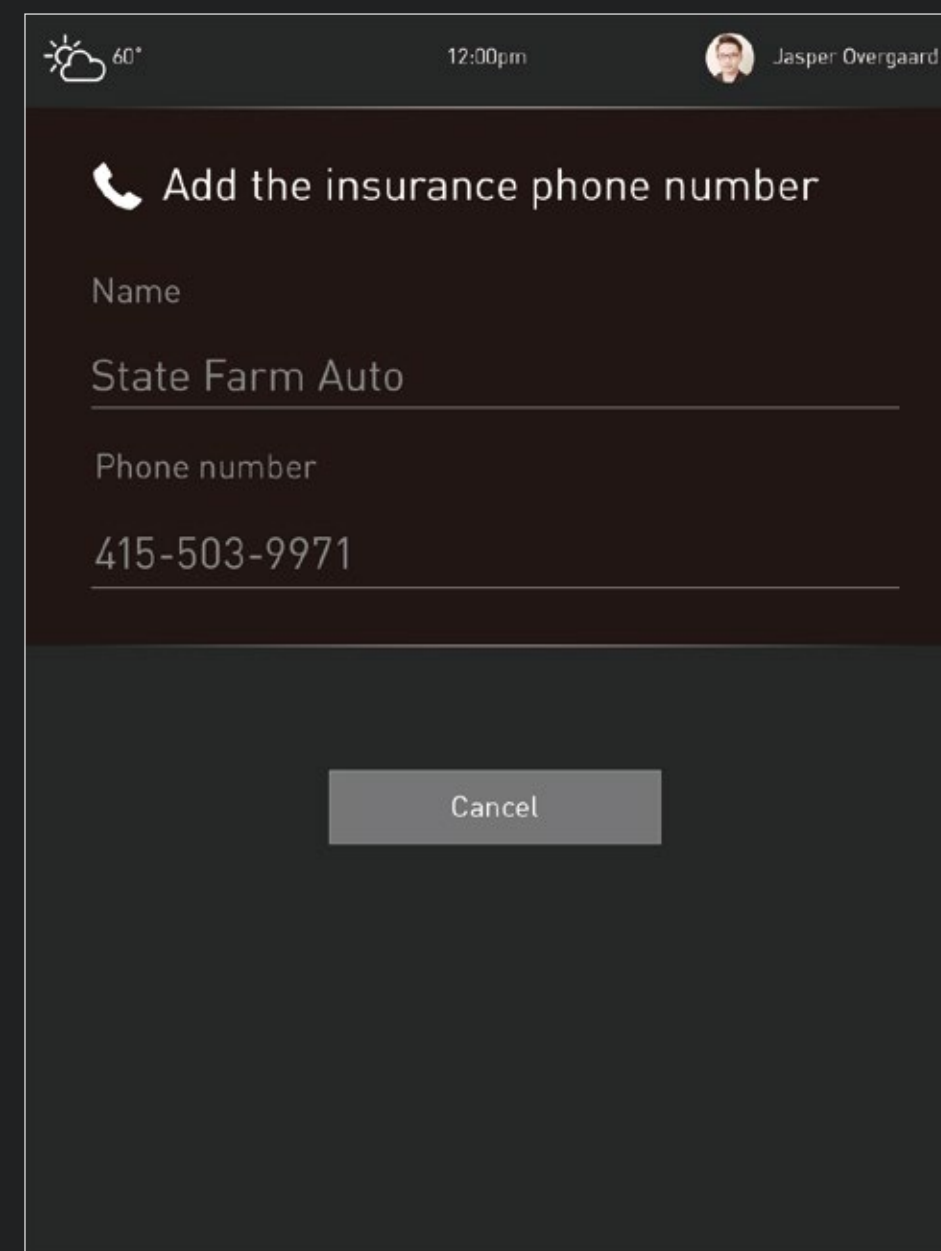
Input emergency information

PROOF OF CONCEPT TASK Setting



5/11

Type in the number



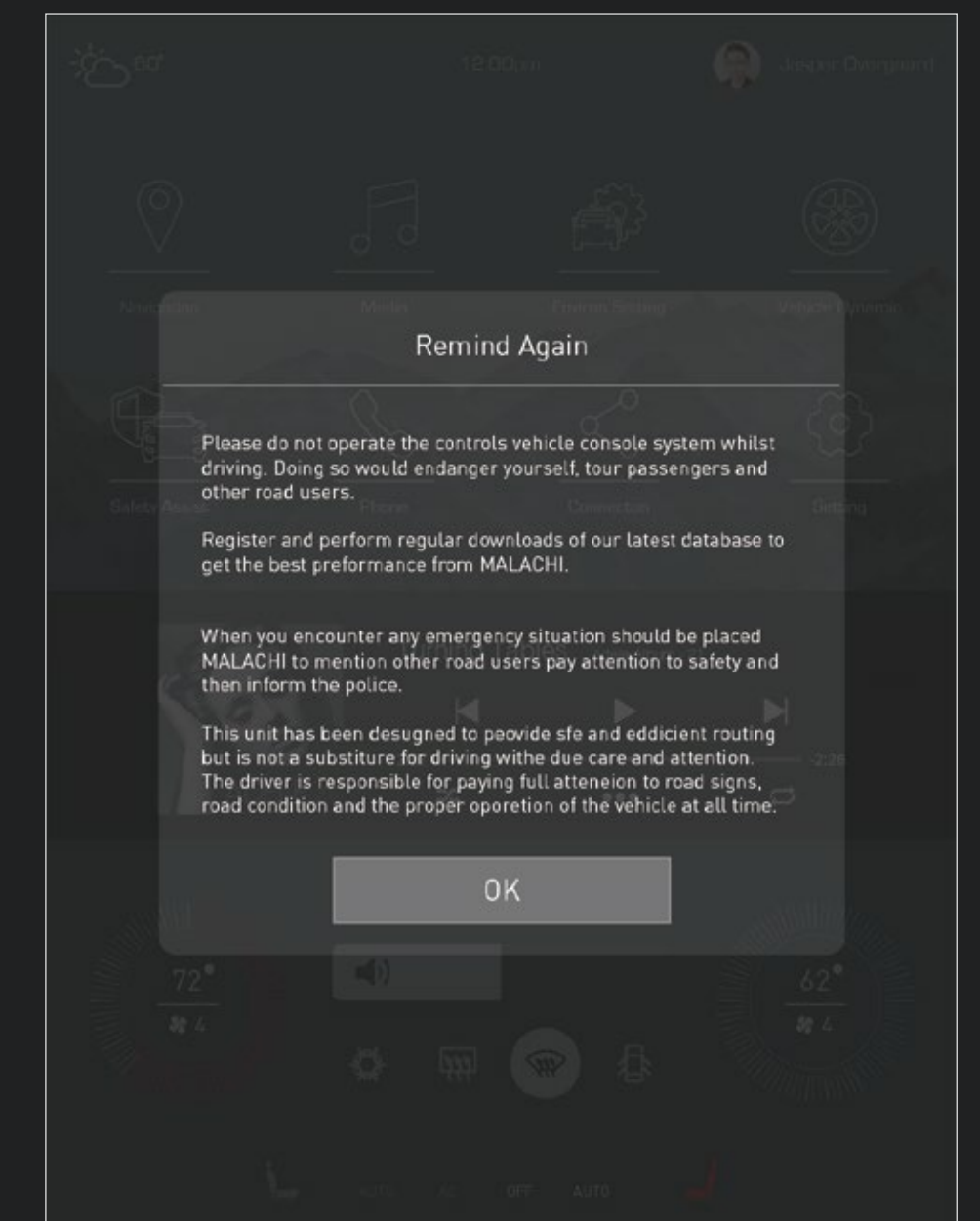
6/11

Click "Submit" info



7/11

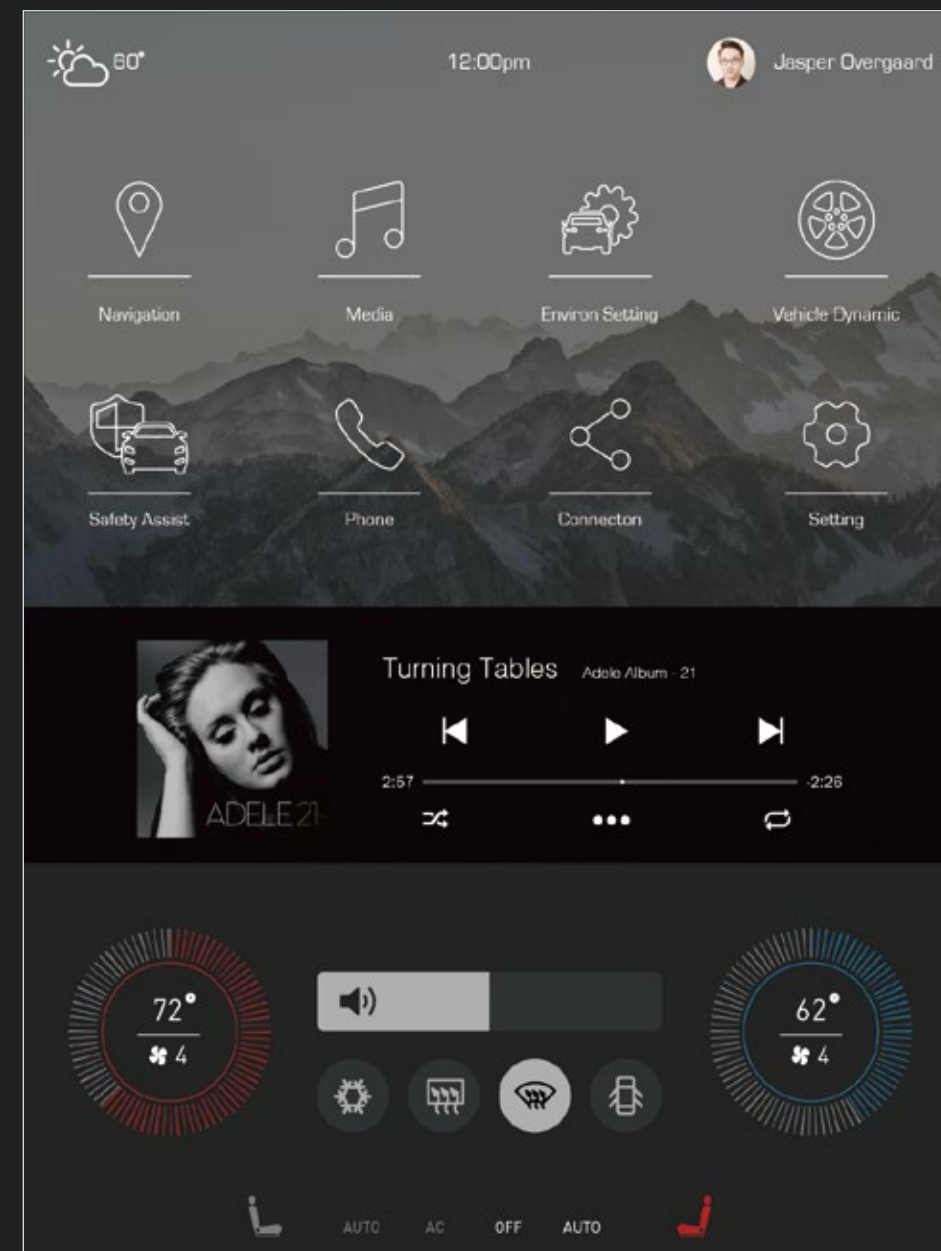
Click "Save" and done



8/11

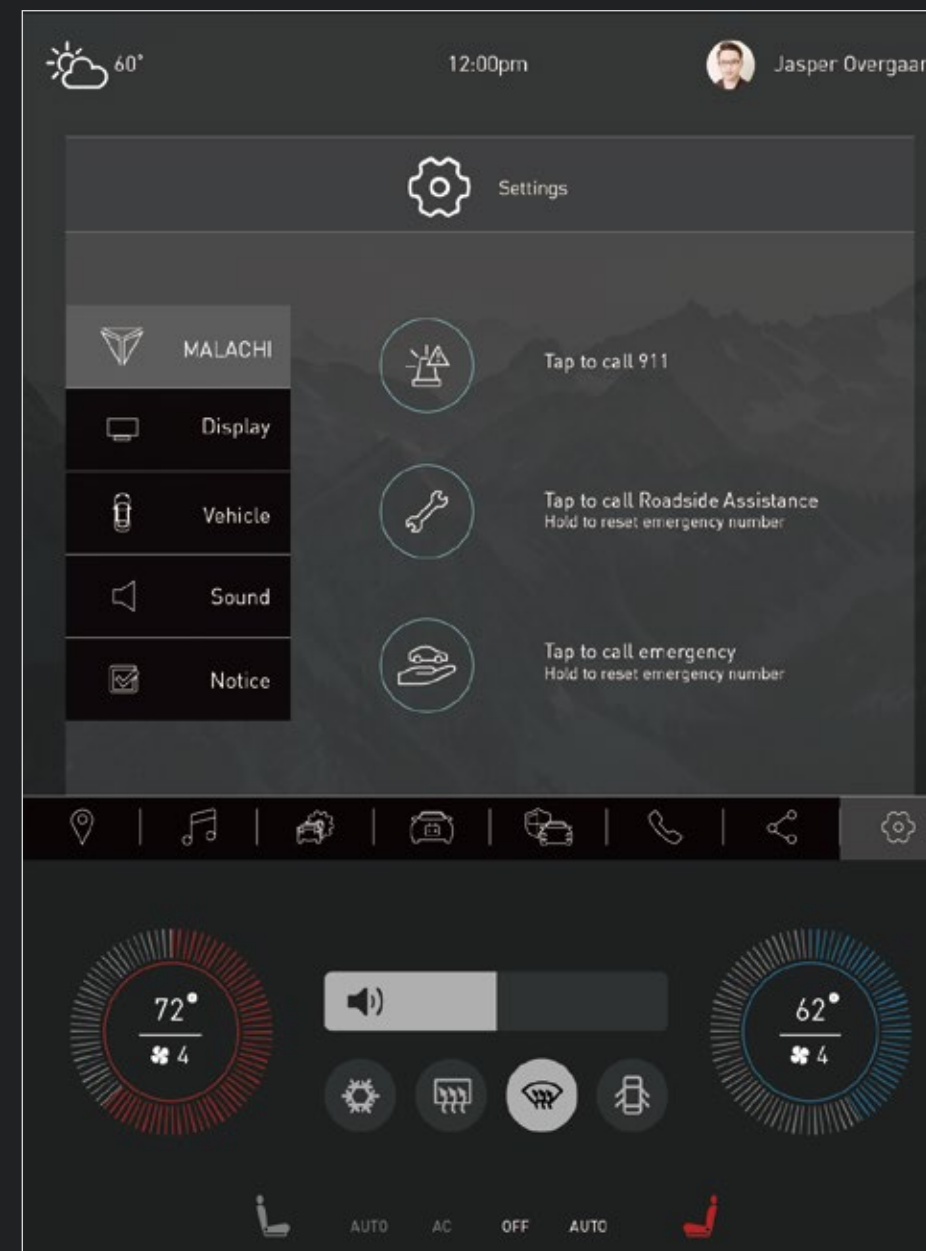
Reminder window to be a safe driver.

PROOF OF CONCEPT TASK Setting



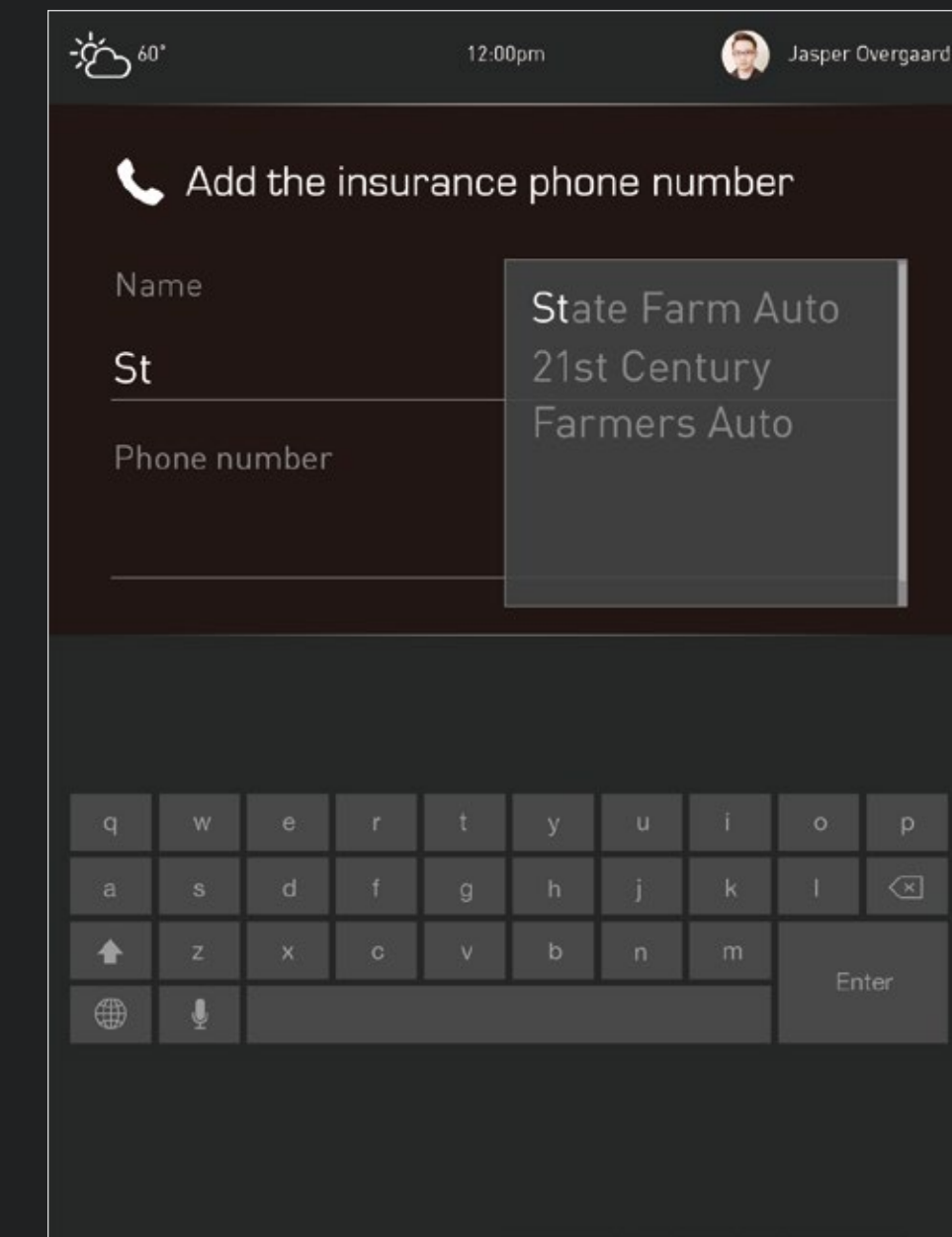
9/11

Home Page



10/11

Click the Settings icon to make changes to saved information or to set up other functions.



11/11

When into the MALACHI system setting page hold the icon can reset the phone number.

Car Break Down

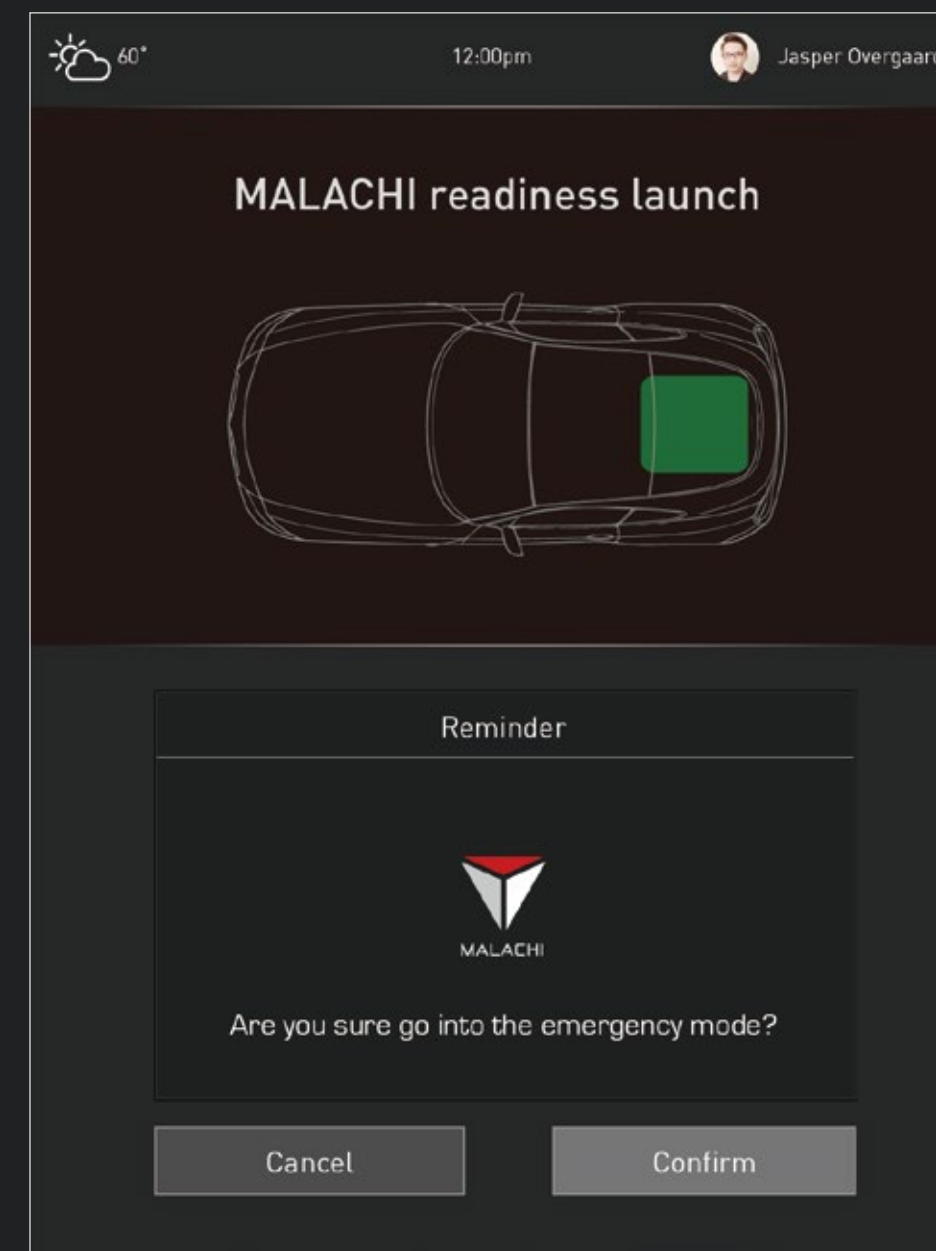


PROOF OF CONCEPT TASK Car Break Down



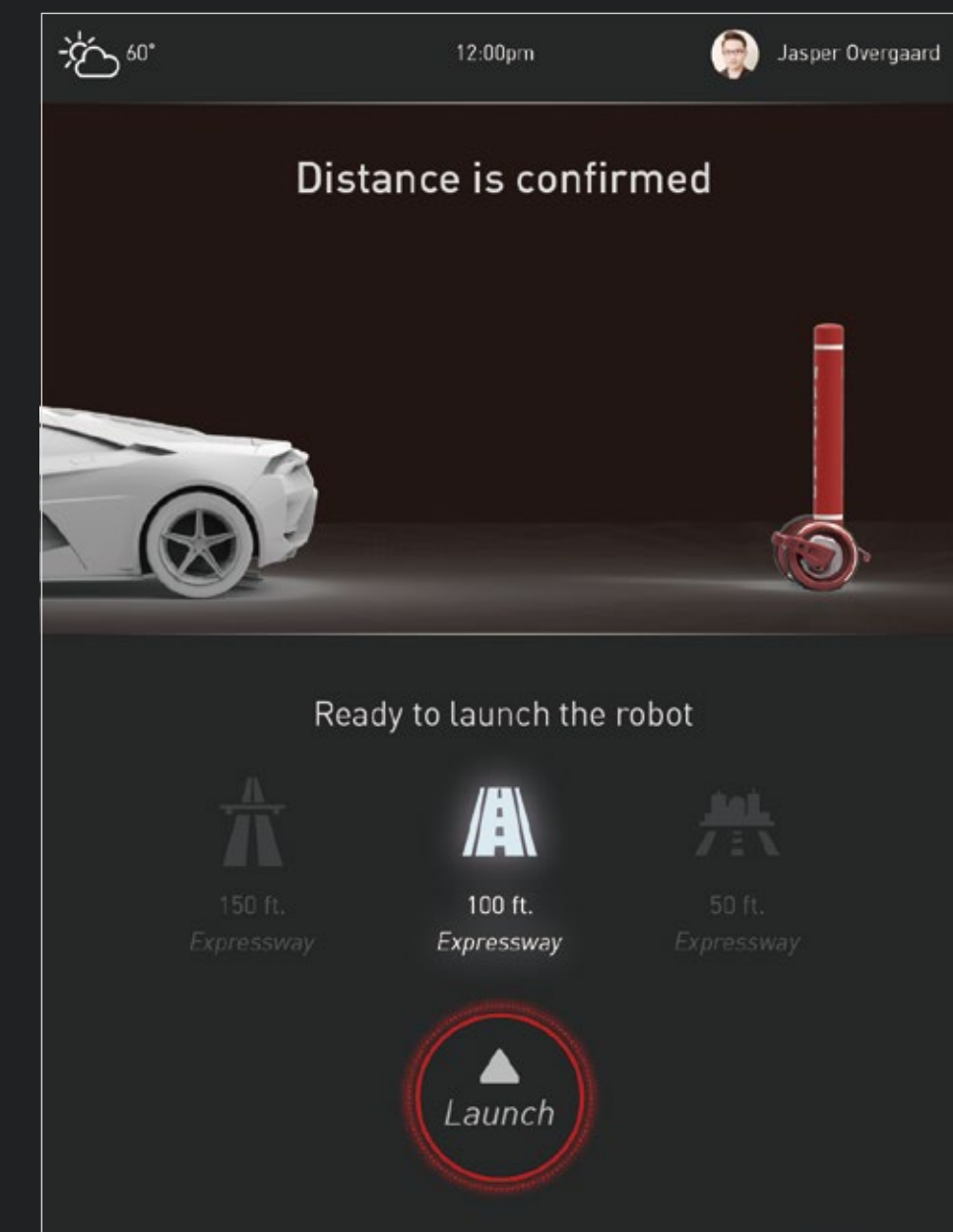
1/9

Click the emergency button



2/9

Access the Emergency confirm page.



3/9

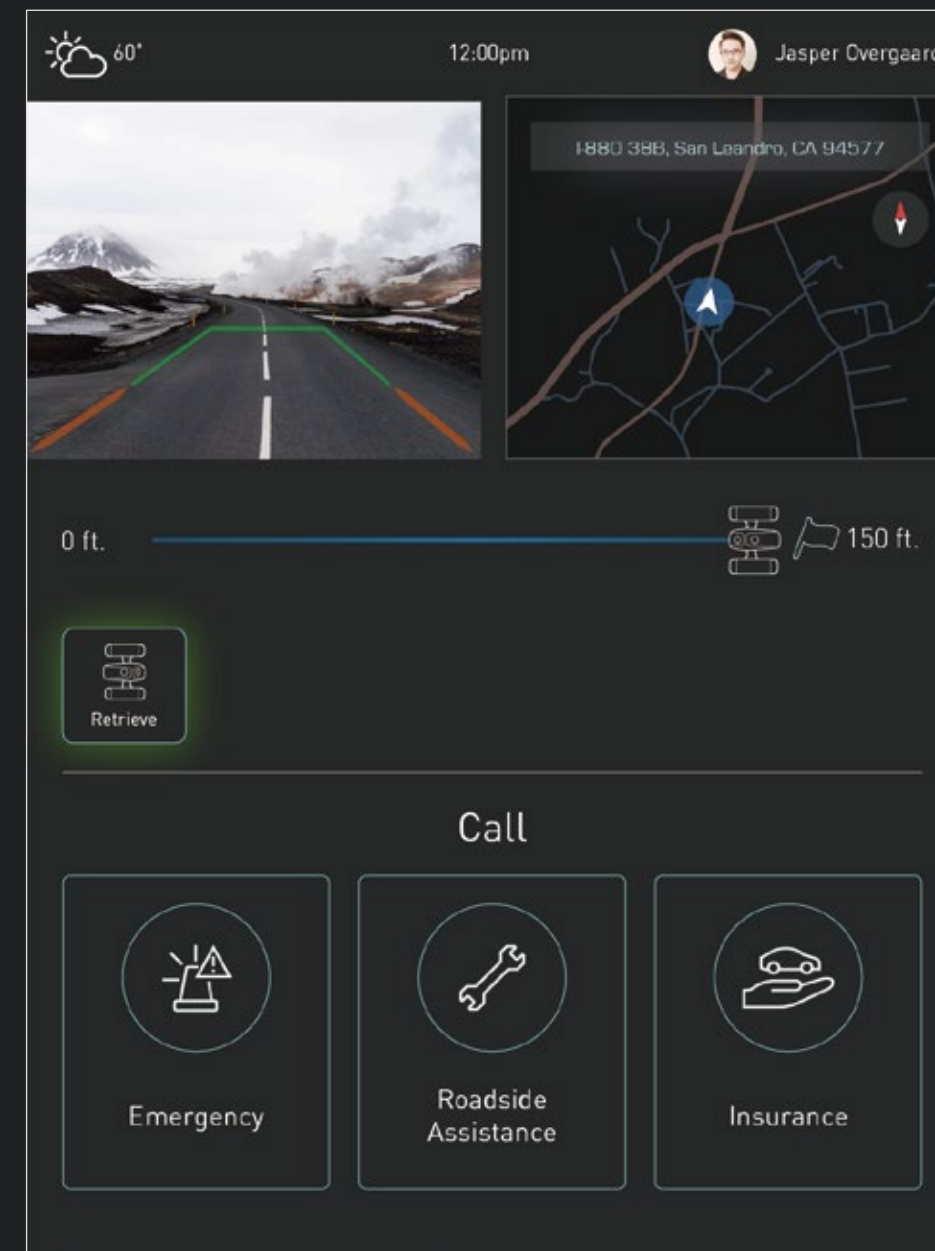
MALACHI will automatically launch the balloon and place the robot at the correct distance. Users can see and adjust the robot.

PROOF OF CONCEPT TASK Car Break Down



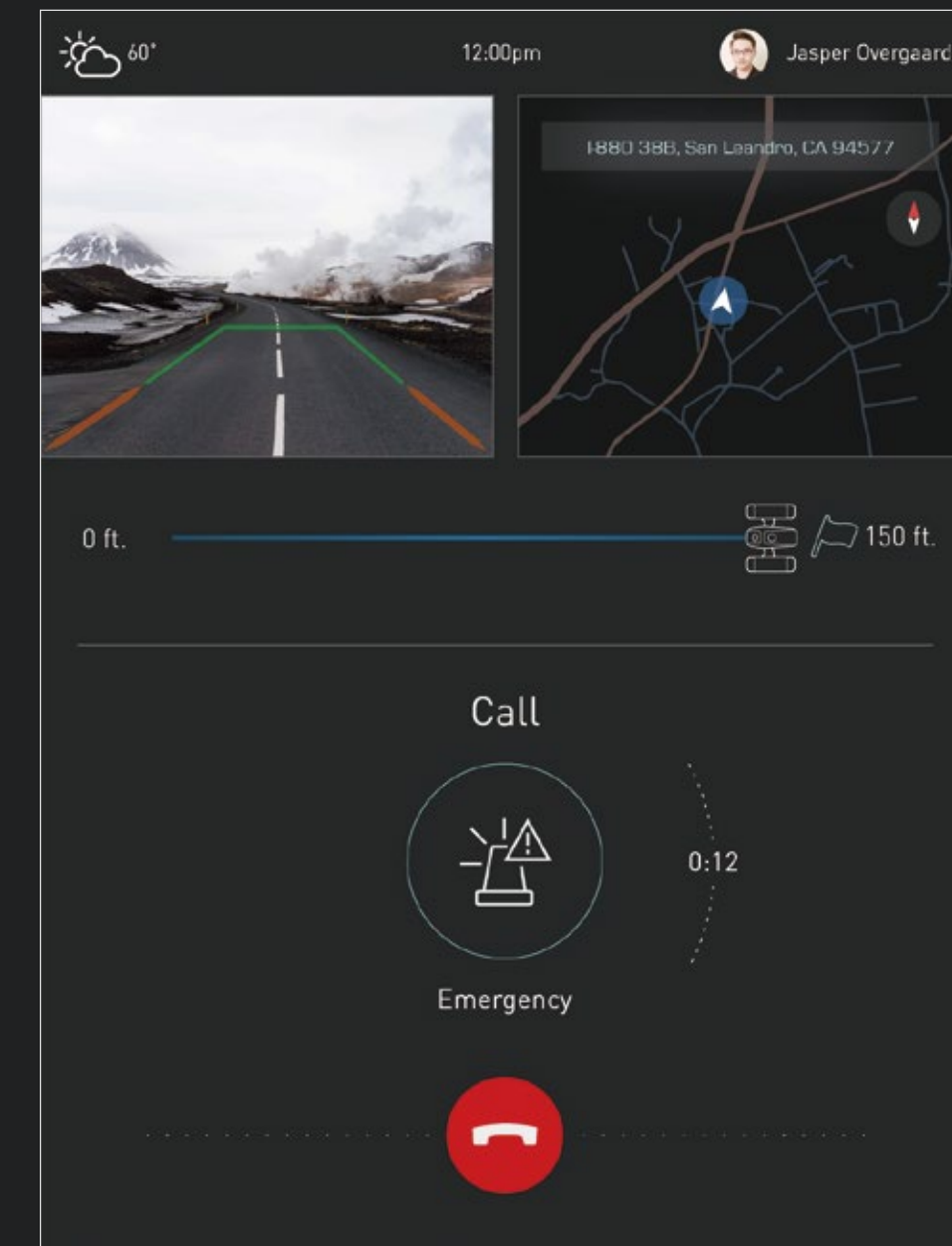
4/9

Can see the setup status of the MALACHI robot



5/9

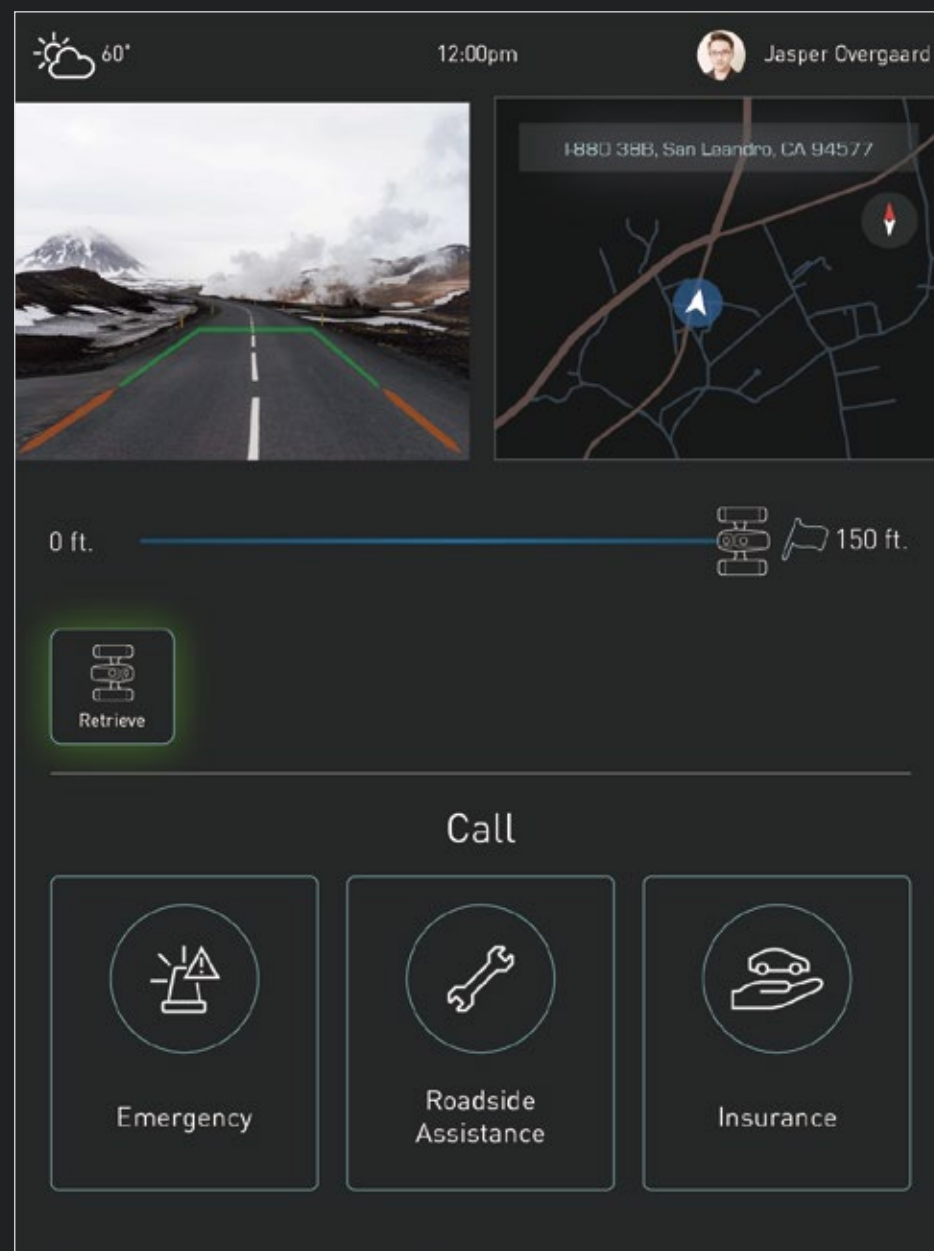
Click any emergency number you want to call



6/9

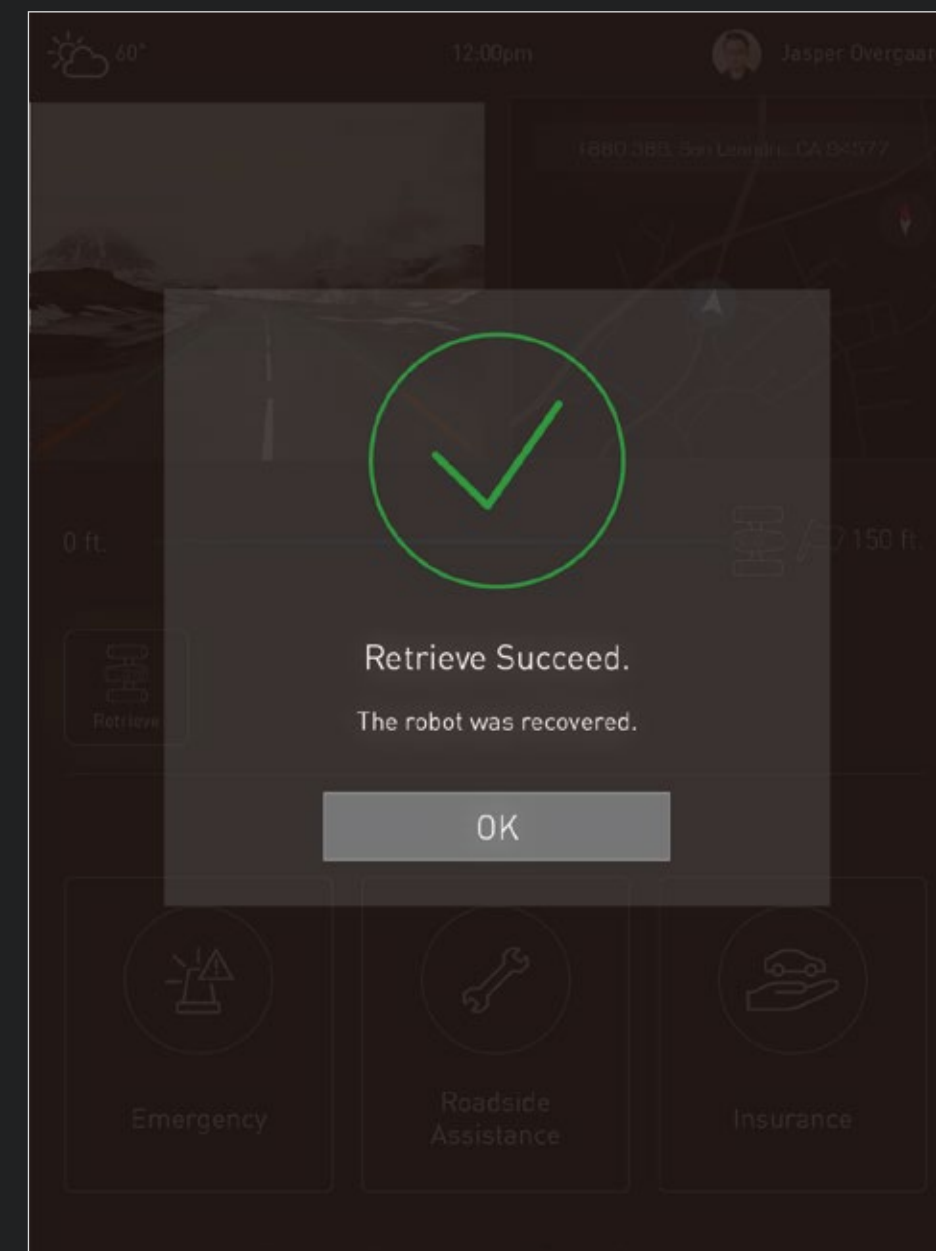
Emergency numbers can be easily called through prior settings.

PROOF OF CONCEPT TASK Car Break Down



7/9

Recover the robot and balloon. Click "Retrieve"



8/9

Wait and confirm.



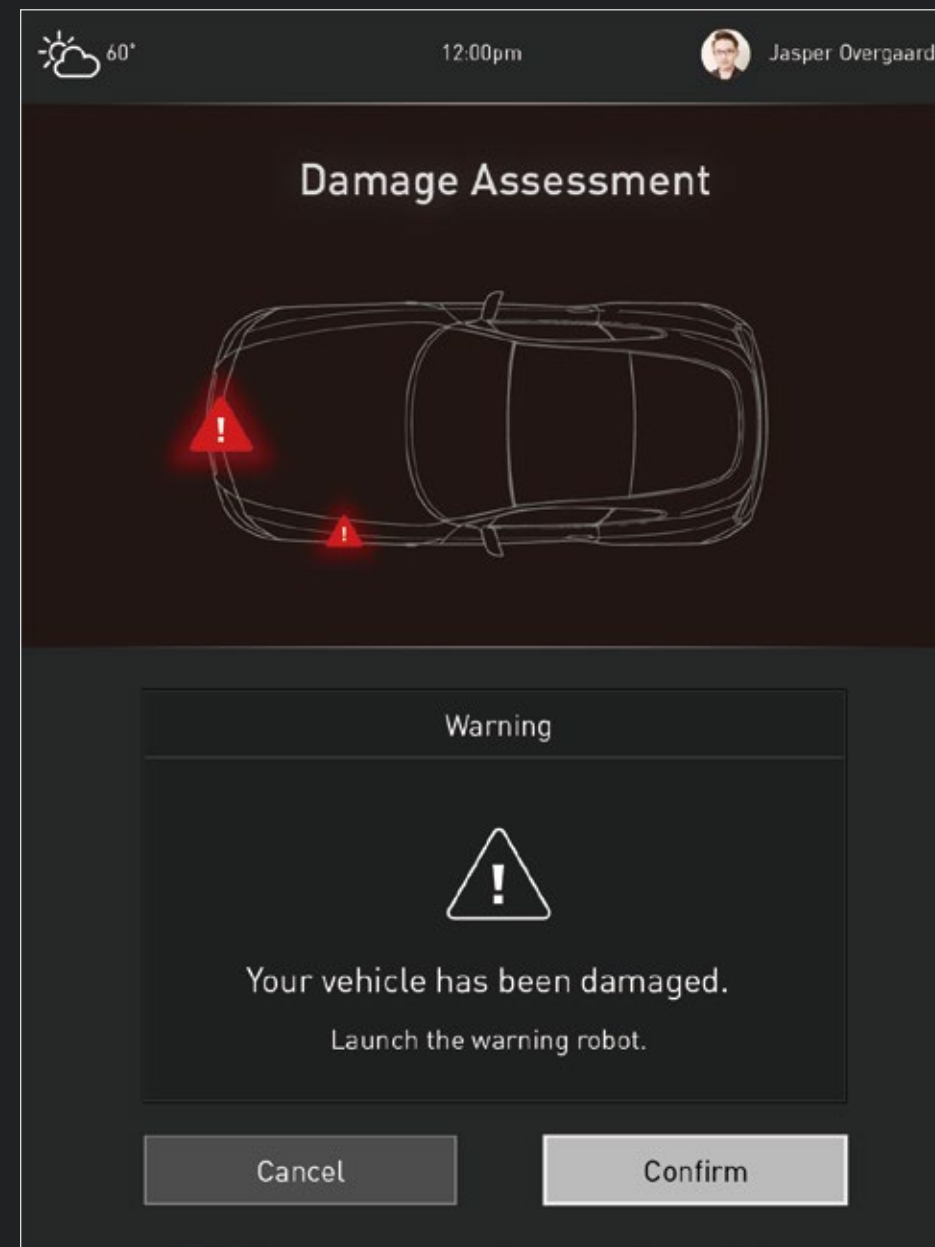
9/9

Mission completed and leave MALACHI.

Small Crash

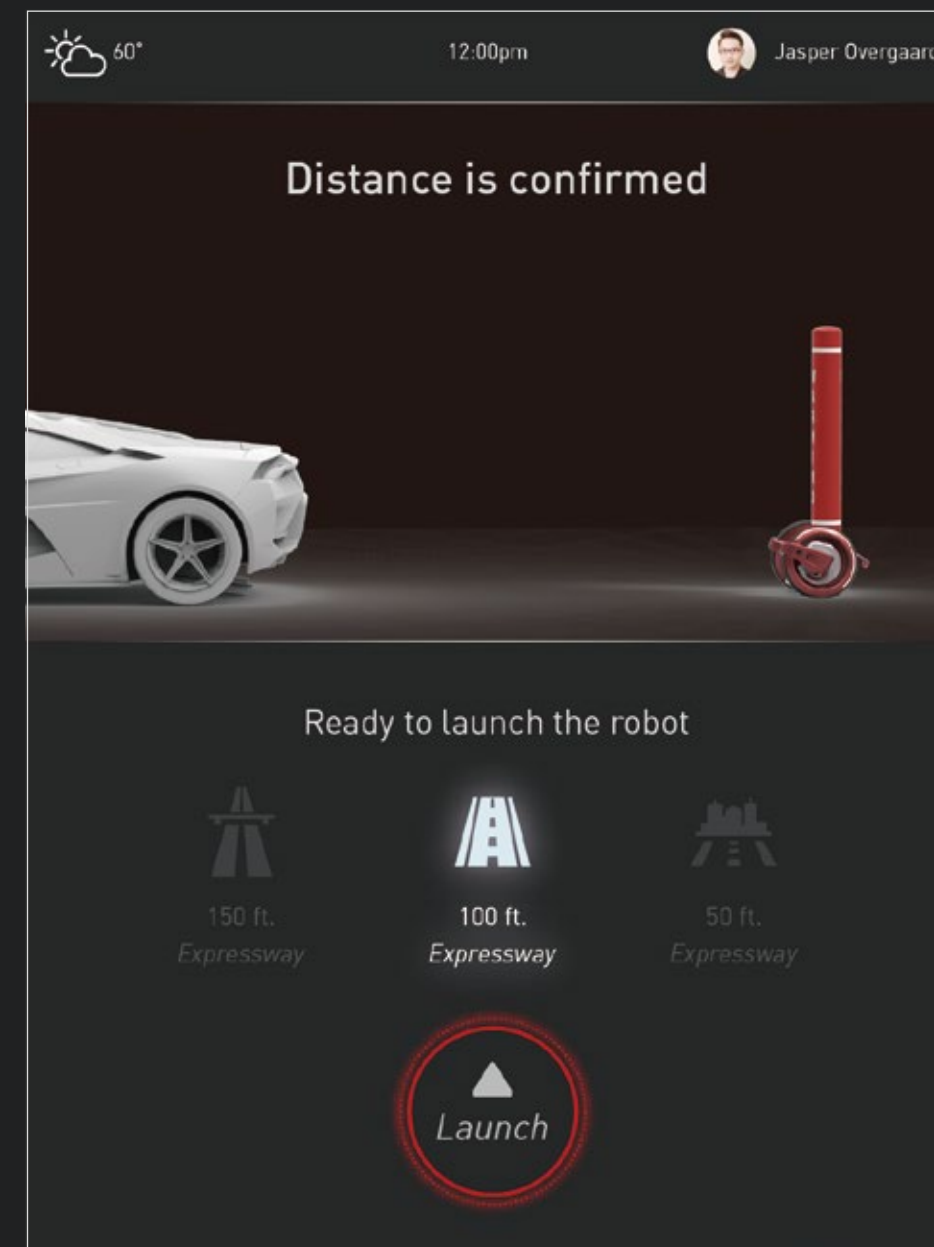


PROOF OF CONCEPT TASK #Small Crash



1/9

When the user is in a small car crash, MALACHI will show the current car collision situation and automatically remind the user to start up the warning robot.



2/9

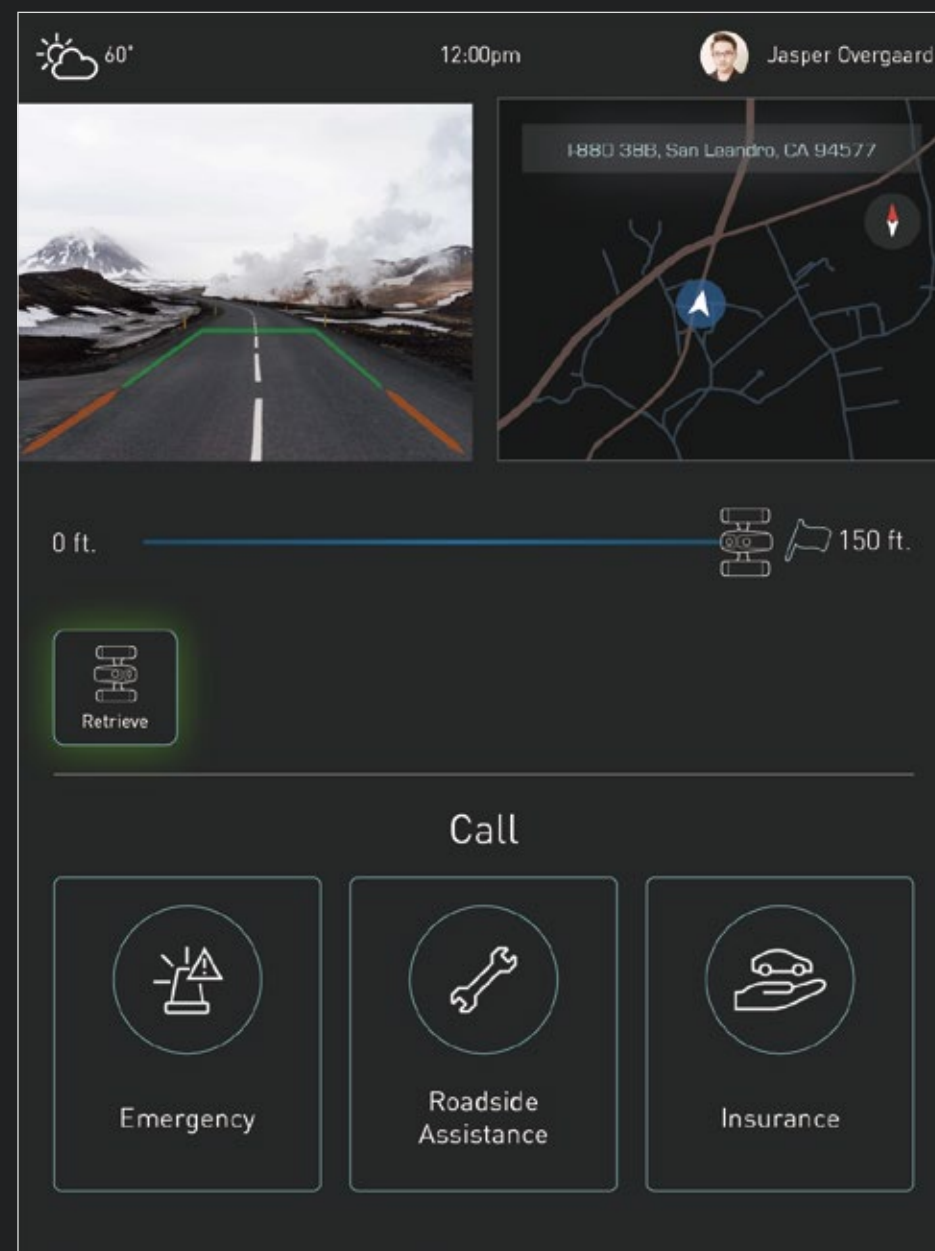
MALACHI will automatically launch the balloon and place the robot at the correct distance. Users can see and adjust the robot.



3/9

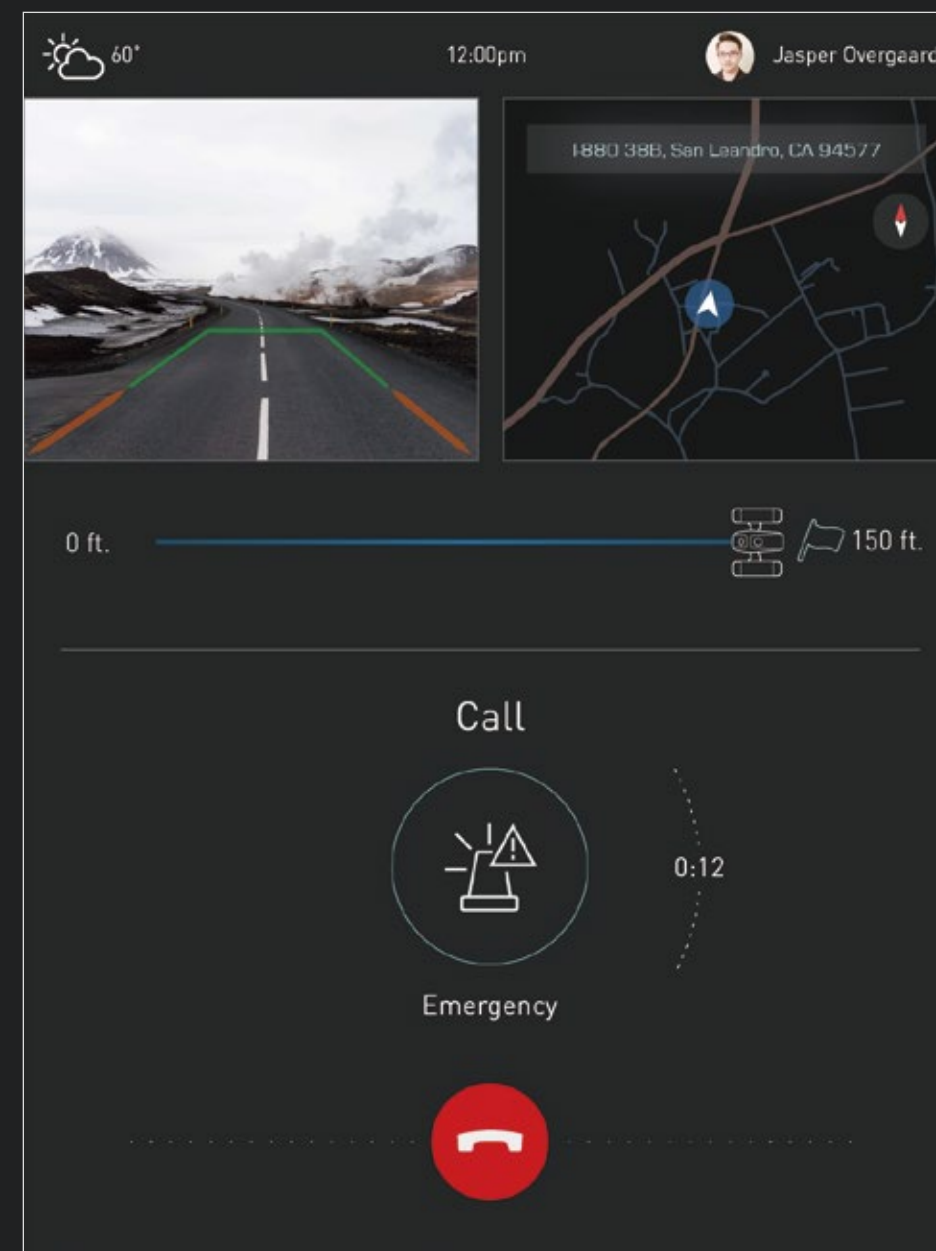
Can see the setup status of the MALACHI robot

PROOF OF CONCEPT TASK #Small Crash



4/9

Click any emergency number you want to call



5/9

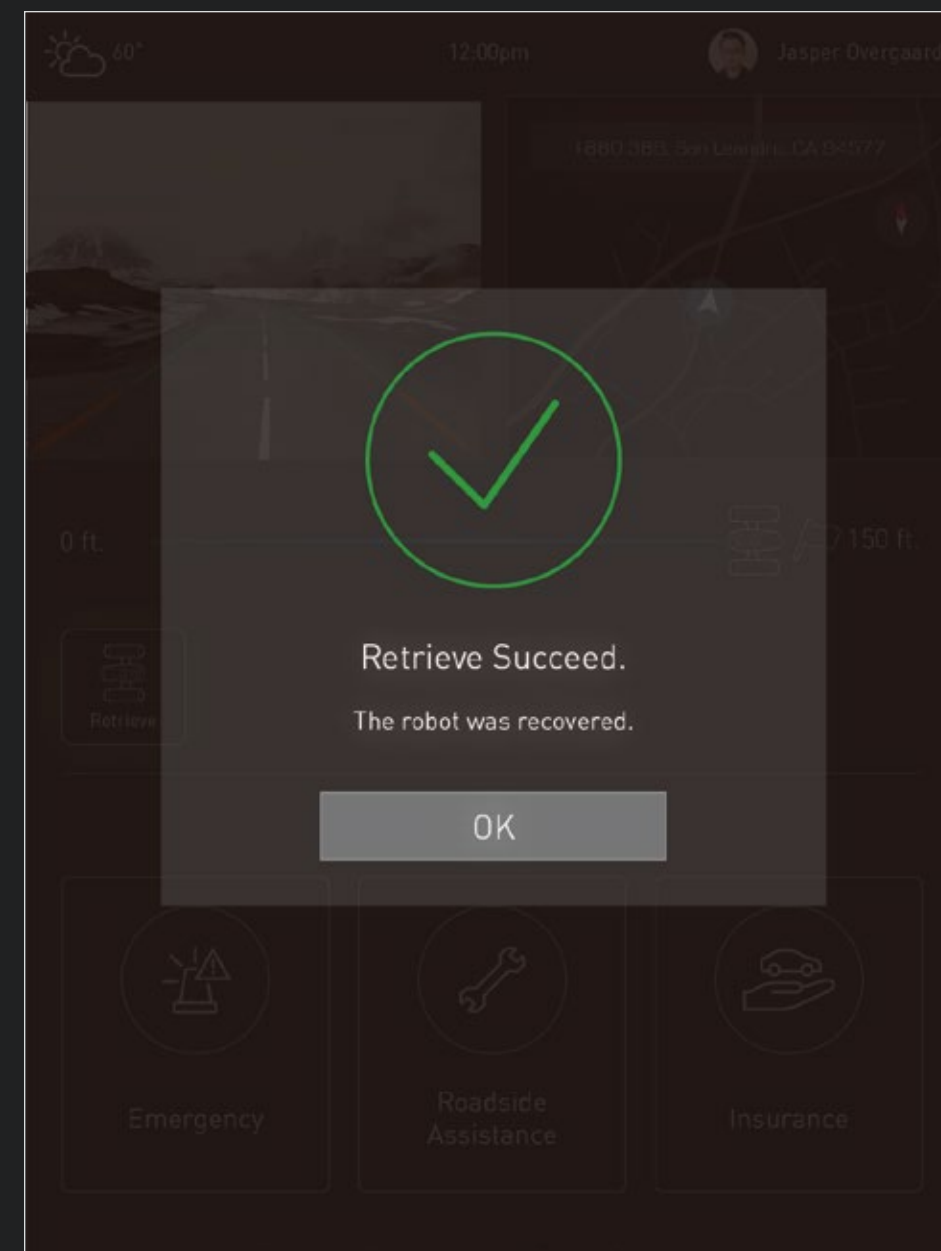
Emergency numbers can be easily called through prior settings.



6/9

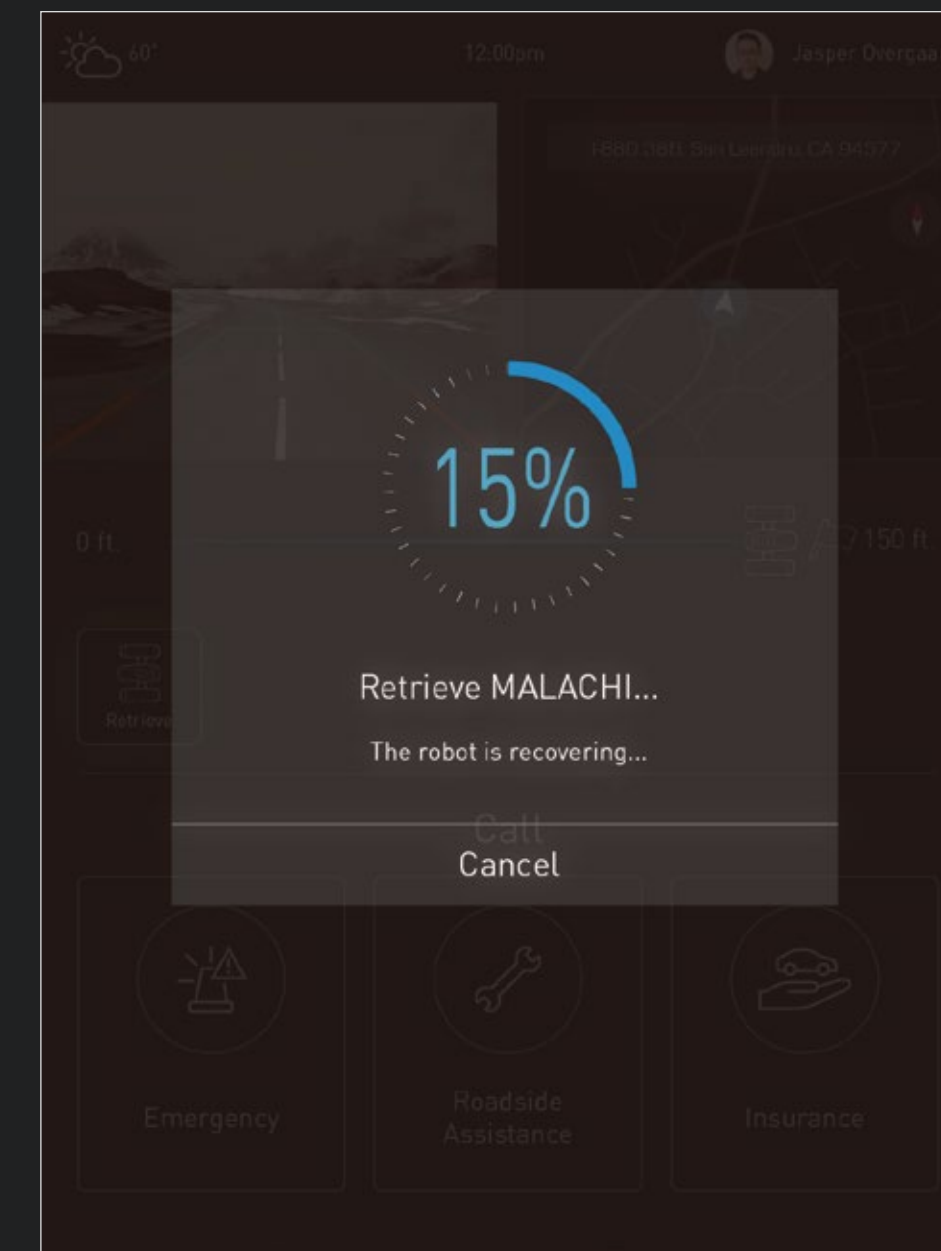
Recover the robot and balloon. Click "Retrieve"

PROOF OF CONCEPT TASK #Small Crash



7/9

Wait and confirm.



8/9

Mission completed and leave MALACHI.

Sever Crash



PROOF OF CONCEPT TASK Sever Crash

Automation

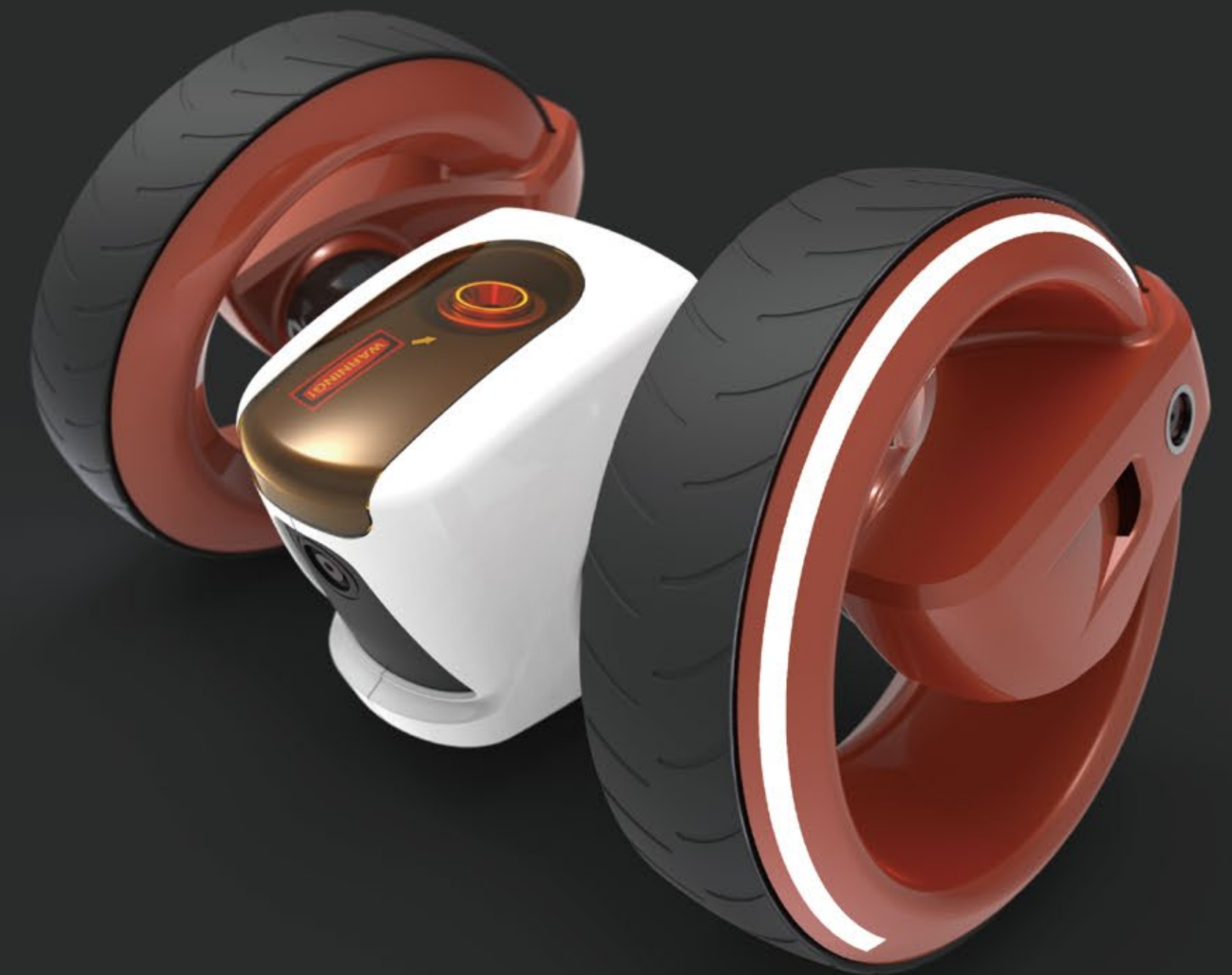
MALACHI is fully automated for emergencies that result in unconscious drivers





MALACHI

MALACHI is an automatic systems that helps drivers avoid secondary accidents.



Folding Function



Warning balloon

LED light

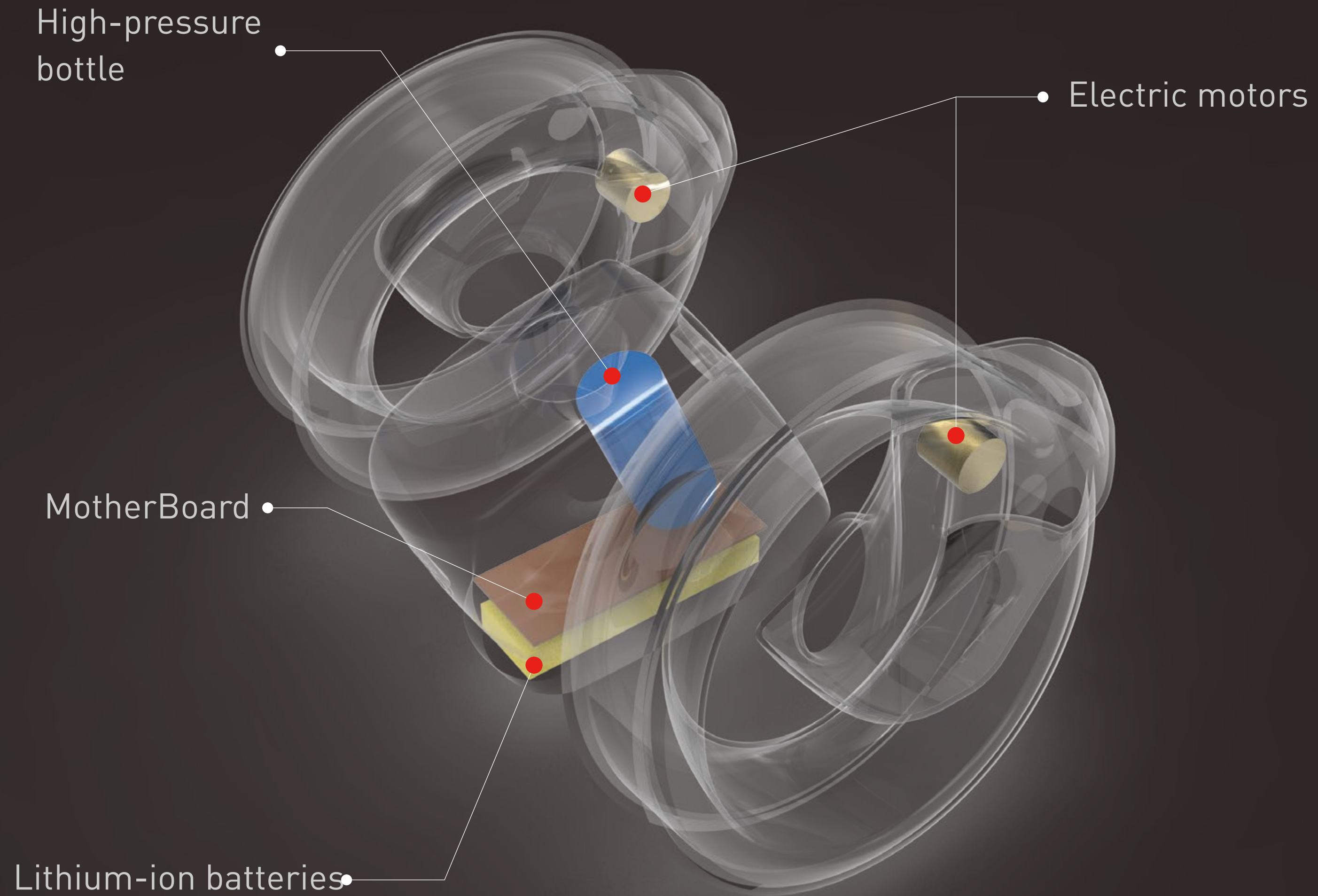
Automatically activate

The Physical Activation Button

If the vehicle breaks down due to an emergency such as running out of gas or electricity, the driver can use the physical activation button to launch MALACHI system.



Mechanical Devices



GPS

Built-in battery

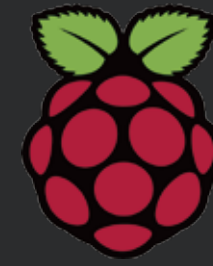
Unlimited Wi-Fi function

High-pressure gas
(filled in only 60 milliseconds)

TECHNICAL EXPLORATIONS



Robot
Dynamic Function
arduino C



Far-End Control
Raspberry pi Node.js
javascript



Interface
Ionic javascript

```
#include <Adafruit_NeoPixel.h>
#ifdef __AVR__
#include <avr/power.h>
#endif

#define NUMPIXELS 60

const int trig = 3;
const int echo = 2;
const int inter_time = 1000;
int light = 40;

// LED
const byte LED = 31;
Adafruit_NeoPixel pixels = Adafruit_NeoPixel(NUMPIXELS, LED, NEO_GRB + NEO_KHZ800);

// 接收序列埠值的函數
char cmd;
// 設定啟動與停止馬達的參數
// 一開始先設定成「停止」
boolean run = false;

// 左馬達控制設定
const byte LEFT1 = 30;
const byte LEFT2 = 9;
const byte LEFT_PWM = 5;

// 右馬達控制設定
const byte RIGHT1 = 8;
const byte RIGHT2 = 7;
const byte RIGHT_PWM = 6;

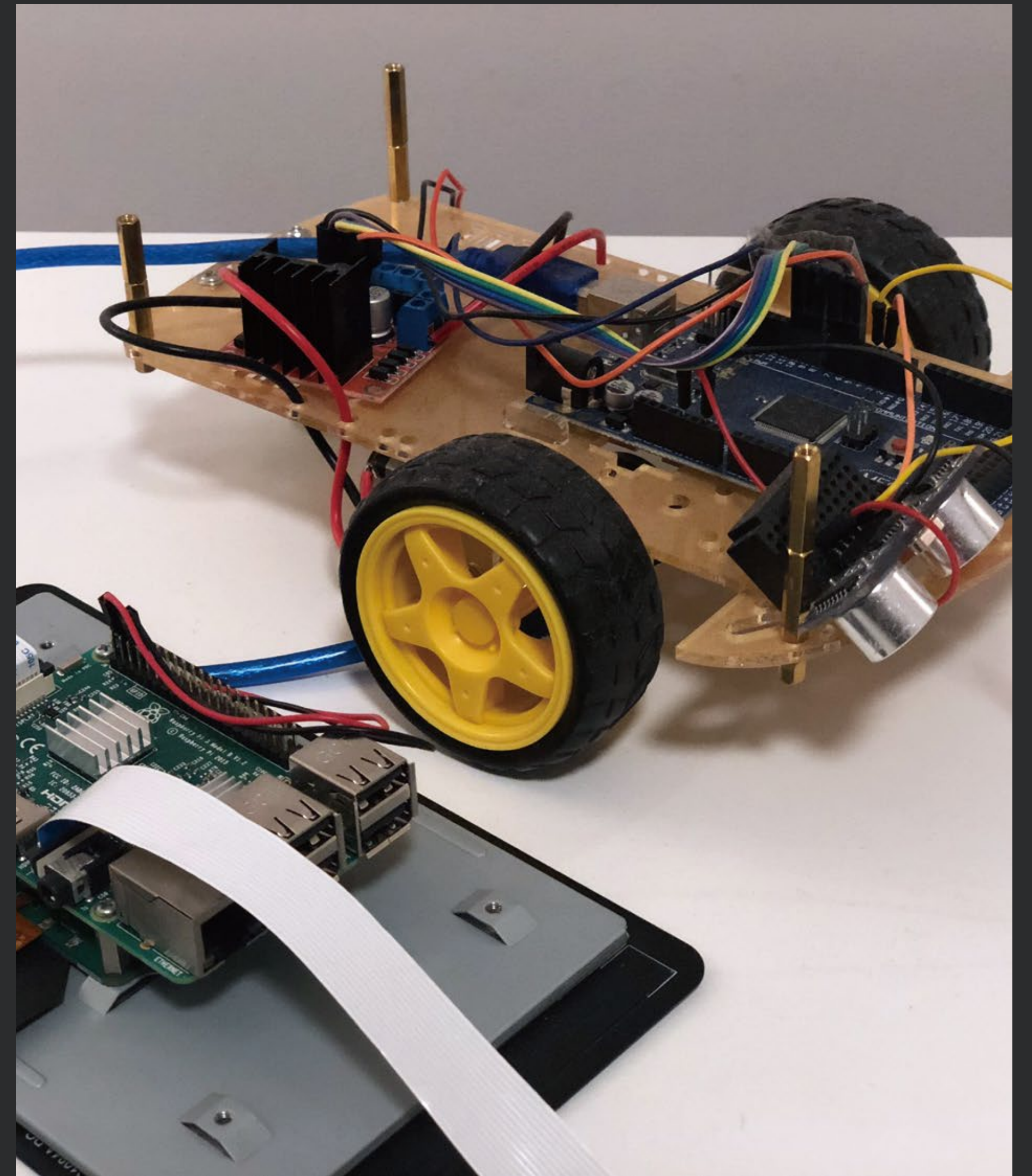
// 設定PWM輸出值 (註: FA-130馬達供電不要超過3v)
byte motorSpeed = 110;
byte motorSpeedLeft = 110;
byte motorSpeedRight = 110;

void backward() { // 馬達轉向: 前進
digitalWrite(LEFT1, HIGH);
digitalWrite(LEFT2, LOW);
digitalWrite(RIGHT1, HIGH);
digitalWrite(RIGHT2, LOW);
}

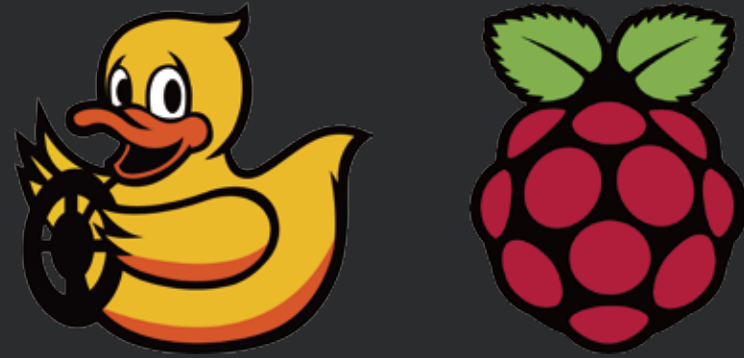
void forward() { // 馬達轉向: 後退
digitalWrite(LEFT1, LOW);
digitalWrite(LEFT2, HIGH);
digitalWrite(RIGHT1, LOW);
digitalWrite(RIGHT2, HIGH);
}
```

```
1 'use strict';
2
3 // process.env.NODE_URL = '10.10.47.198';
4 // process.env.NODE_URL = 'localhost';
5 process.env.NODE_URL = '192.168.86.151';
6 console.log('Running Development!');
7
8
9
10 let mahrio = require('mahrio');
11 mahrio.runServer(process.env, __dirname).then(server => {
12
13 // Import SerialPort library
14 let SerialPort = require('serialport');
15 // create a serialport instance for arduino
16 let port = new SerialPort('/dev/cu.usbmodem1411');
17
18 port.on('open', () => {
19 console.log(port);
20 });
21
22 port.on('data', data => {
23 console.log(data);
24 });
25
26 port.on('error', error => {
27 console.log(error);
28 });
29
30 let io = require('socket.io').listen(server.listener);
31
32 io.on('connection', socket => {
33 console.log('socket.io listening . . . ' + socket.id);
34
35 // Say hello to new connection
36 socket.emit('event:hello');
37
38 socket.on('client:set:led', val => {
39 console.log('Too long LED!');
```

```
1 angular.module('app', [
2 'ionic',
3 'ngCordova',
4 'app.controllers',
5 'app.routes',
6 'app.directives',
7 'app.services',
8 ])
9 .config(function($ionicConfigProvider, $stateProvider) {
10 $stateProvider.resourceWhitelist(['self']);
11 })
12 .run(function($ionicPlatform) {
13 $ionicPlatform.ready(function() {
14 // Hide the accessory bar by default (remove this to show the acces:
15 // for form inputs)
16 if (window.cordova && window.cordova.plugins && window.cordova.plugins.Keyboard) {
17 window.cordova.plugins.Keyboard.hideKeyboardAccessoryBar(true);
18 window.cordova.plugins.Keyboard.disableScroll(true);
19 }
20 if (window.StatusBar) {
21 // org.apache.cordova.statusbar required
22 StatusBar.styleDefault();
23 }
24 });
25 })
26 .directive('disableSideMenuDrag', ['$ionicSideMenuDelegate', '$rootScope', '$element', '$attrs', function ($scope, $element, $attrs, function ($scope) {
27 return {
28 restrict: "A",
29 controller: ['$scope', '$element', '$attrs', function ($scope, $element, $attrs) {
30 function stopDrag () {
31 $ionicSideMenuDelegate.canDragContent(false);
32 }
33 function allowDrag () {
34 $ionicSideMenuDelegate.canDragContent(true);
35 }
36 $rootScope.$on('$ionicSlides.slideChangeEnd', allowDrag);
37 $element.on('touchstart', stopDrag);
38 $element.on('touchend', allowDrag);
39 }
40 }
41 }
42 }
43 }
44 }
45 }
46 }
47 }
48 }
49 }
50 }
51 }
52 }
53 }
54 }
55 }
56 }
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79 }
80 }
81 }
82 }
83 }
84 }
85 }
86 }
87 }
88 }
89 }
90 }
91 }
92 }
93 }
94 }
95 }
96 }
97 }
98 }
99 }
100 }
```



TECHNICAL EXPLORATIONS



Duckietown
Python



```
bunnytownt@bunnytownt:~$ ssh ubuntu@alphaduck
ubuntu@alphaduck:~$ sudo apt update
Welcome to Ubuntu 16.04.3 LTS (GNU/Linux 4.4.38-v7+ armv7l)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage
```



```
95 packages can be updated.
0 updates are security updates.

Last login: Sat Oct 21 21:43:02 2017 from 192.168.0.100
Welcome to a ducklebot!
```

```
Reminders:
1) Do not use the user 'ubuntu' for development -create your own user.
2) Change the name of the robot from 'ducklebot' to something else.

Need to set DUCKIETOWN_ROOT - configuration is invalid (!)
Need to set DUCKIEFLEET.
Need to set DUCKIETOWN_DATA.
Activating ROS...
Setup ROS_HOSTNAME...
Setting up PYTHONPATH...
Activating development environment...
Setting ROS_MASTER_URI...
No hostname provided. Using alphaduck.
ROS_MASTER_URI set to http://alphaduck.local:11311/
ubuntu@alphaduck:~/duckietown$
```

In Terminal: Confirm that the program is turned on and software and devices are work together.

```
95 packages can be updated.
0 updates are security updates.

Last login: Sat Oct 21 21:43:02 2017 from 192.168.0.100
Welcome to a ducklebot!
```

```
Reminders:
1) Do not use the user 'ubuntu' for development -create your own user.
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Need to set DUCKIETOWN_ROOT - configuration is invalid (!)
Need to set DUCKIEFLEET.
Need to set DUCKIETOWN_DATA.
Activating ROS...
Setup ROS_HOSTNAME...
Setting up PYTHONPATH...
Activating development environment...
Setting ROS_MASTER_URI...
No hostname provided. Using alphaduck.
ROS_MASTER_URI set to http://alphaduck.local:11311/
ubuntu@alphaduck:~/duckietown$ source environment.sh
Need to set DUCKIEFLEET.
Activating ROS...
Setup ROS_HOSTNAME...
Setting up PYTHONPATH...
Activating development environment...
ubuntu@alphaduck:~/duckietown$ source set_ros_master.sh alphaduck
Setting ROS_MASTER_URI...
ROS_MASTER_URI set to http://alphaduck.local:11311/
ubuntu@alphaduck:~/duckietown$ roslaunch duckietown camera.launch veh:=alphaduck
... Logging to /home/ubuntu/.ros/log/20171021-20171021-20171021-20171021/roslaunch-alphaduck-1291.log
Checking log directory for disk usage. This may take awhile.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://alphaduck.local:45735/

SUMMARY
*****
```

ROS

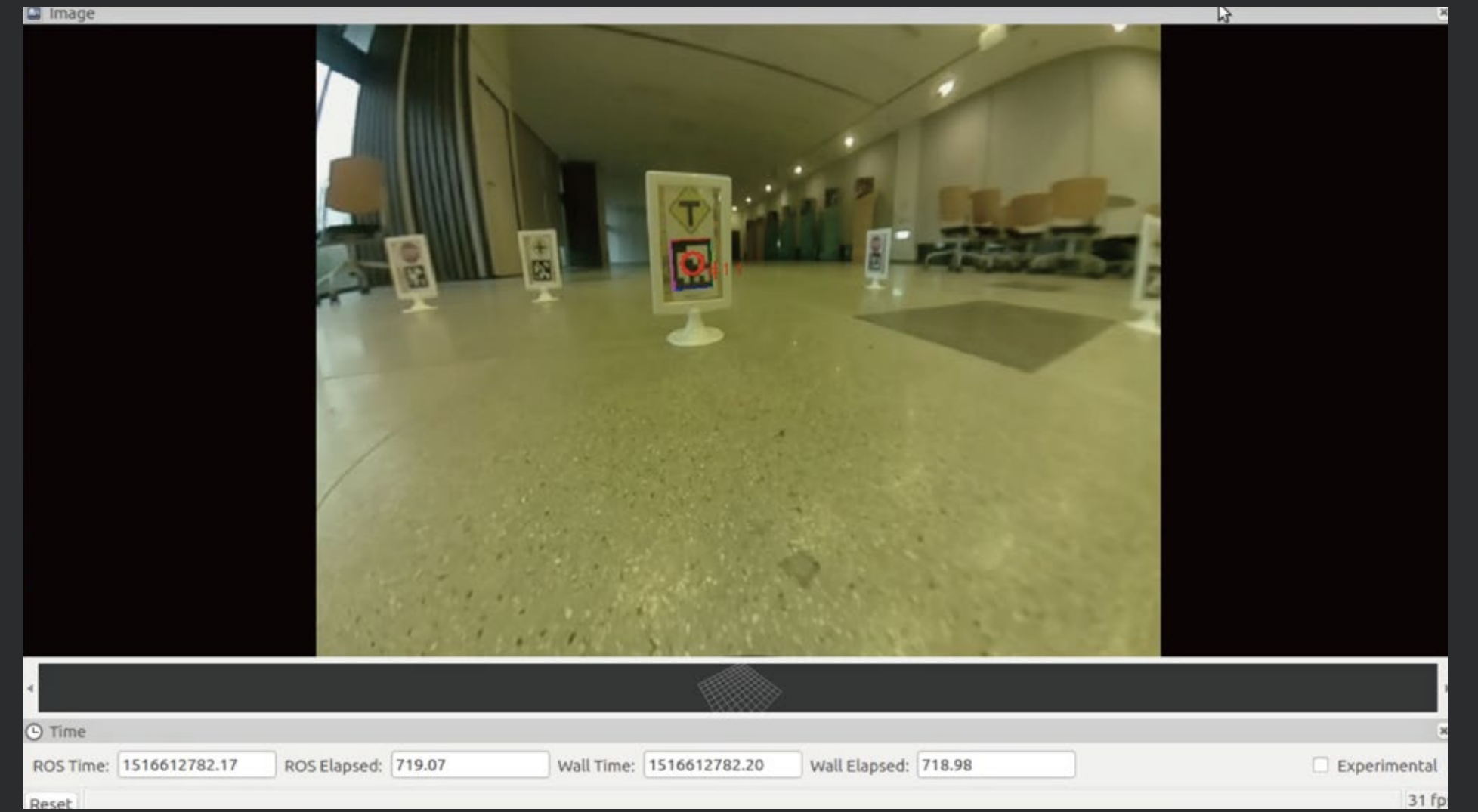
RVIZ

```
process[master]: started with pid [1307]
ROS_MASTER_URI=http://alphaduck.local:11311/

setting /run_id to 2a1171b2-b65b-11e7-aab4-b027ebd4df5e
process[rosout-1]: started with pid [1320]
started core service [/rosout]
process[alphaduck/camera_node-2]: started with pid [1325]
process[alphaduck/can_info_reader_node-3]: started with pid [1326]
[INFO] [150858836.021367]: [/alphaduck/can_info_reader_node] --config = baseline
[INFO] [150858836.033335]: [/alphaduck/can_info_reader_node] --call file name = alphaduck
[INFO] [150858836.044369]: [/alphaduck/can_info_reader_node] --image type = compressed
[WARN] [150858836.213610]: [/alphaduck/can_info_reader_node] can't find calibration file: /home/ubuntu/duckietown
/catkln_ws/src/00-Infrastructure/duckietown/config/baseline/calibration/camera_intrinsic/alphaduck.yaml.
Using default calibration instead.
[INFO] [150858836.214832]: [/alphaduck/can_info_reader_node] Using calibration file: /home/ubuntu/duckietown/catk
ln_ws/src/00-Infrastructure/duckietown/config/baseline/calibration/camera_intrinsic/default.yaml
[INFO] [150858836.263248]: [/alphaduck/can_info_reader_node] canerainfo: header:
seq: 0
stamp:
  secs: 0
  nsecs: 0
frame_id: /alphaduck/camera_optical_frame
height: 480
width: 640
distortion_model: plumb_bob
D: [-0.250588893510947, 0.04481160508242147, -0.00505275149956019, 0.001308569367976665, 0]
K: [307.7379294605750, 0, 329.692367951685, 0, 314.9827773443905, 244.4665588877848, 0, 0, 1]
R: [1, 0, 0, 0, 1, 0, 0, 0, 1]
P: [210.1107948673828, 0, 327.2577820024981, 0, 0, 253.8408660888672, 239.9969353923052, 0, 0, 0, 1, 0]
binning_x: 0
binning_y: 0
rot:
  x_offset: 0
  y_offset: 0
  height: 0
  width: 0
do_rectify: false
[WARN] [150858836.264410]: [/alphaduck/can_info_reader_node] =====CompressedImage
[INFO] [150858836.256267]: [/alphaduck/camera_node] Initializing.....
[INFO] [150858836.268211]: [/alphaduck/camera_node] -framerate_high = 30
[INFO] [150858836.279448]: [/alphaduck/camera_node] -framerate_low = 15
[INFO] [150858836.293717]: [/alphaduck/camera_node] -res_w = 640
[INFO] [150858836.304481]: [/alphaduck/camera_node] -res_h = 480
[INFO] [150858836.757481]: [/alphaduck/camera_node] --config = baseline
[INFO] [150858836.932611]: [/alphaduck/camera_node] Initialized.
[INFO] [150858836.934730]: [/alphaduck/camera_node] Start capturing.
[INFO] [150858836.931635]: [/alphaduck/camera_node] Published the first image.
```



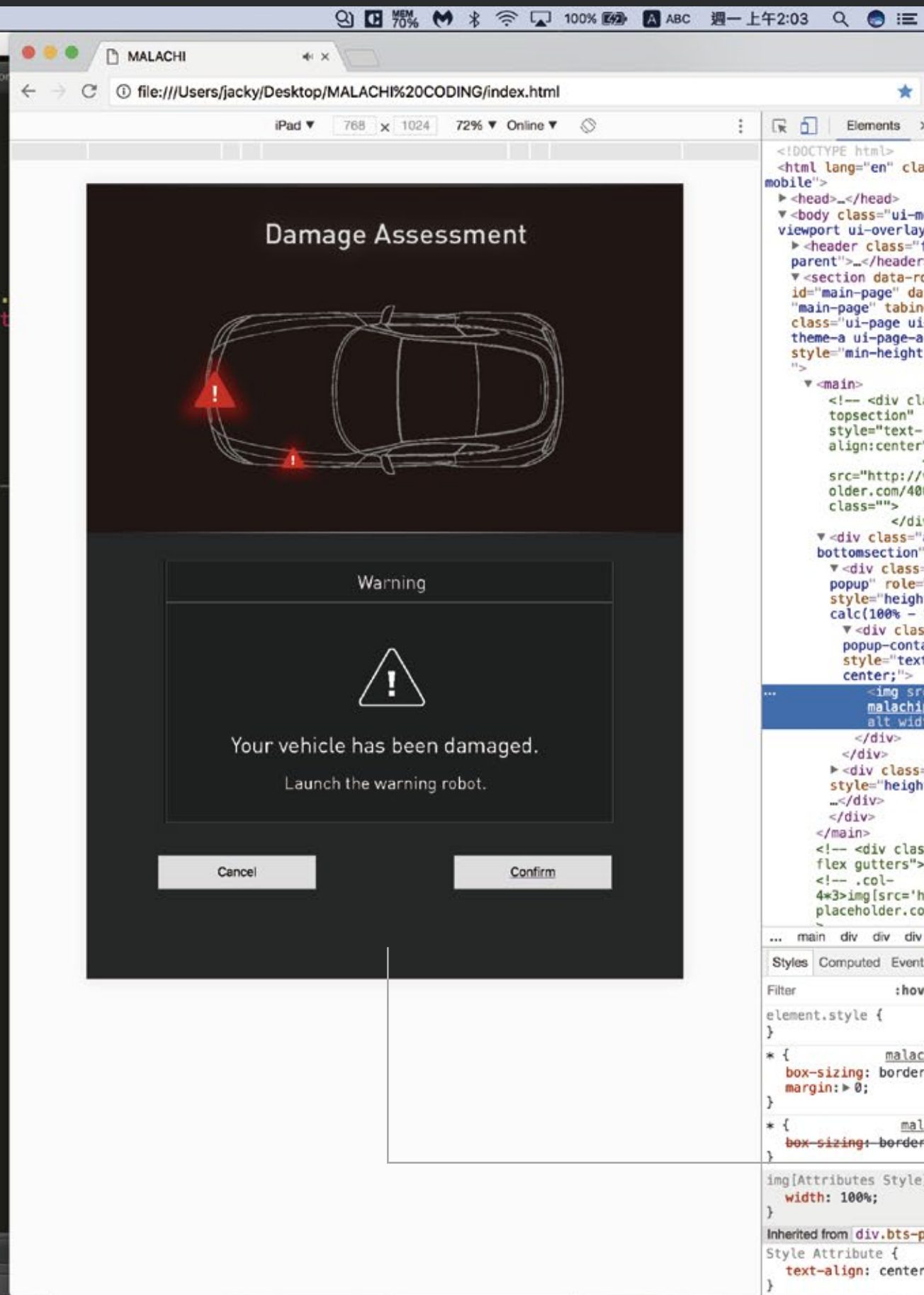
NTHUE
National Tsing Hua University
The Department of Electrical Engineering Organization



TECHNICAL EXPLORATIONS

Code:
HTML
CSS
JavaScript

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4
5 <meta charset="UTF-8">
6 <meta name="viewport" content="width=device-width, initial-scale=1.0">
7 <title>MALACHI</title>
8 <meta name="apple-mobile-web-app-capable" content="yes">
9 <link rel="stylesheet" type="text/css" href="lib/css/jquery.mobile.structure-1.4.5.min.
10 <script src="http://cdnjs.cloudflare.com/ajax/libs/jquery/2.1.3/jquery.min.js"></script>
11
12 <link rel="stylesheet" href="css/glyphicon.css">
13 <link rel="stylesheet" href="css/grid.css">
14 <link rel="stylesheet" href="css/malachi.css">
15
16
17 <!-- <link href="https://fonts.googleapis.com/css?family=Open+Sans" rel="stylesheet"> -->
18
19 <script src="lib/js/jquery-2.2.4.min.js"></script>
20 <script src="lib/js/jquery.mobile-1.4.5.min.js"></script>
21 <script src="lib/js/lodash.min.js"></script>
22 <script src="js/script.js"></script>
23 <script src="js/loading.js"></script>
24 <script src="js/retrieve.js"></script>
25 <script src="https://www.w3schools.com/lib/w3.js"></script>
26 <script src="js/mappin.js"></script>
27
28 <script>
29 // setTimeout(function(){
30 //   $("main").addClass("alert")
31 // },1500)
32 </script>
33
34 <!-- <script>
35 var map;
36 function initMap() {
37   map = new google.maps.Map(document.getElementById('map'), {
38     center: {lat: 37.826528, lng: -122.300212},
39     zoom: 15
40   });
41 };
42 }
43 </script> -->
44 <script src="https://maps.googleapis.com/maps/api/
45 js?key=AIzaSyC5naEgeRdgUKa0pKlmo9-1an-VL1207ys&callback=initMap"
46 async defer></script>
47
```



Prototype:
Web (Chrome)

For The Next

The current stage of MALACHI design, concept and protocol is not only quite complete but also affirmed in all points. MALACHI is considered to have great potential in the future of the market for automated vehicles.

However, today's technology is not mature enough to allow MALACHI to become a real product in the autonomous-car industry, so I still have a lot of work to do for few the next years. I plan to continue to participate in design and entrepreneurship competitions. I need to get more exposure and network for potential investment funds. In the future, I would love to organize all kinds of talents to realize this product and put it into the automotive market.

2017



2018



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