Project WBS

WBS	Task Name	Duration	Start	Finish	Predecessors
1	Meeting and defining the project idea	5hrs	Sun 16/10/2022	Sun 16/10/2023	
2	Understanding the project and assigning tasks	4 days	Mon 17/10/2022	Thu 20/10/2022	1
3	Determine the objective of the project	1 day	Fri 21/10/2022	Fri 21/10/2022	2
4	Determine the scope of the project and its target group	2 day	Sat 22/10/2022	Mon 24/10/2022	3

Step 1 : System Planning

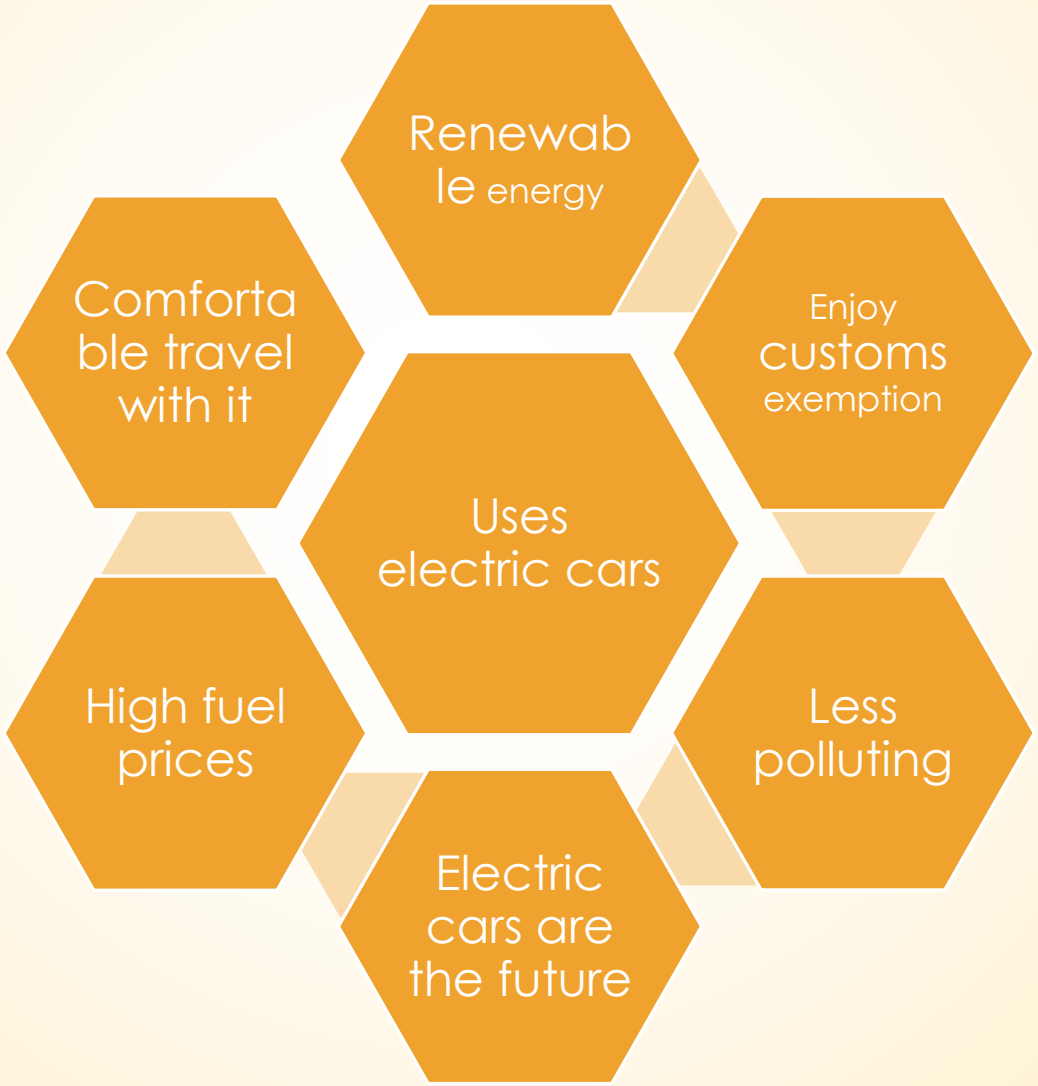
Systems planning The first phase of the SDLC, where the need for a new or enhanced system is identified and the proposed system's scope is determined.

Systems planning, involves two primary activities :

1) someone identifies the need for a new or enhanced system.

2) To Investigate the system and determine the proposed system's scope.

The purpose of using electric cars

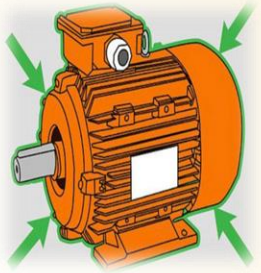


Targeted group

- Small families
- The category interested in preserving the environment
- The category that faces problems in driving the car
- The category interested in modification and development

Project scope

Green battery



Ease of use

Project scope

Electrical engine

Simple interior design

Step 2: Systems Analysis

WBS

A	B	Time Days	D	E	F
5	**Determining the requirements to develop new electric car**	**2**	**Sunday 23/10/2022**	**Tuesday 25/10/2022**	**4**
6	**Study the requirements**	**4**	**Tuesday 25/10/2022**	**Monday 29/10/2022**	**5**
7	**Collect information about previous cars**	**2**	**Monday 29/10/2022**	**Wednesday 1/11/2022**	**5 6**
8	**Generate alternative initial designs to meet the requirements**	**5**	**Wednesday 1/11/2022**	**Monday 6/11/2022**	**7**

Systems analysis

- The second phase in the SDLC, where the systems requirements are determined, alternative solutions are developed, and one is chosen that best meets those requirements, given the cost, labor, and technical resources the organization is willing to commit.
- **Involves:**

1. determining the requirements of the system.
2. the analysts study the requirements and structure them according to their interrelationships, eliminating any redundancies.
3. the analysts generate alternative initial designs to meet the requirements

1.Determining the requirements to develop new electric car .

- All these features are sought by the consumer to reduce consumption and expenses, and this demand gives the producing companies an impetus to invest in electric cars.
- China expects the demand for electric and hybrid cars to reach 25% in 2022

2. Study the requirements

- Volkswagen is well on the way to launching its very own electric revolution. Its range of ID electrified models started out as a host of striking concept cars, but now several are in production and available to lease.

3. Collect information about previous cars .

- Volkswagen ID.3
- 150kW Max Pro Performance 58kWh 5dr Auto
- Personal Contract Hire
- 6+47 5k Miles p/a
- Initial Payment: £2,377.92
- £396.32

3. Collect information about previous cars

- Volkswagen ID.3
- 150kW Max Pro Performance 58kWh 5dr Auto
- Personal Contract Hire
- 3+47 5k Miles p/a
- Initial Payment: £1,260.30
- £420.10

4. Generate alternative initial designs to meet the requirements

- Where Volkswagen is also in is that it will start building ID.4 models in the US later this year detailing some work between commercial vehicles in Europe.

4. Generate alternative initial designs to meet the requirements

- The most noticeable different, from the outside at least, is the body styles of these two cars.
- These include the compact ID.3 hatchback and slightly larger, **family-orientated** ID.4. So, if you're in the market for an electric Volkswagen.

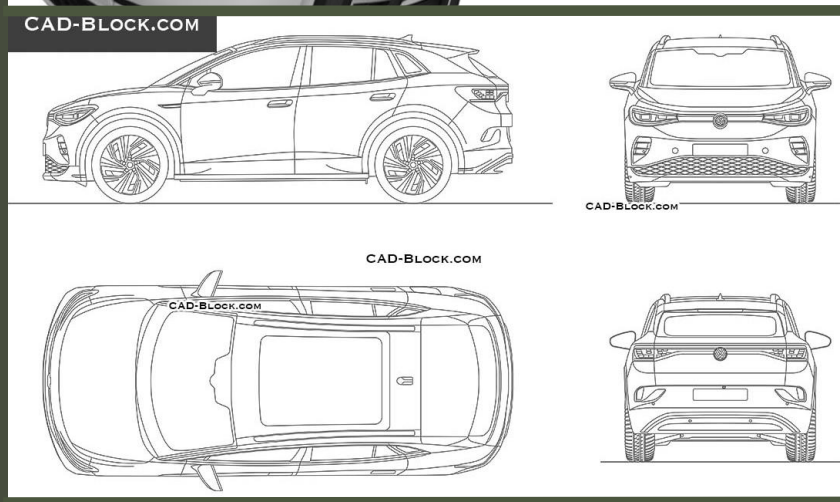
- `We will talk about this in more detail at the Systems Design`

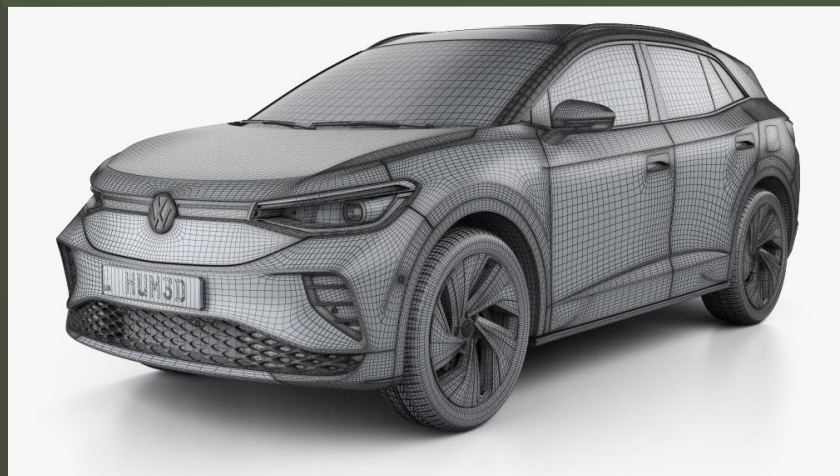
Step 3: Design

Harith Al Naser

1-Create a graphic design model:

- The 3D design step is the basic one in the design of the vehicle. In this step, the numbers and dimensions of the car are also included in order to apply it realistically.





2-Create a wooden embossed design:

- It is the application of the logical design in the previous step and includes the experiment of aerodynamics according to the previously specified numbers and equations.

3-Create a concept version and present it to the public and experts:

- A test version was created before the start of the production of the car, and it is shown in one of the car shows like **New York International Auto Show & LA Auto Show**, and here it is published to the public when to begin car production process.

Concept car

4-Gathering and manufacturing basic components:

- At this stage, the basic components of the car are collected, such as the chassis, body, battery, motors and mechanical parts, to start assembling them on the production line.

5-Assemble the pieces on the production line:

- Assembly of all parts to each other on production lines in three facilities spread around the world (Chattanooga, Tennessee in USA, Zwickau, Germany, and at Foshan and Anting in China) starting from the structure to painting to assembly until the completion of the production line.

Production line

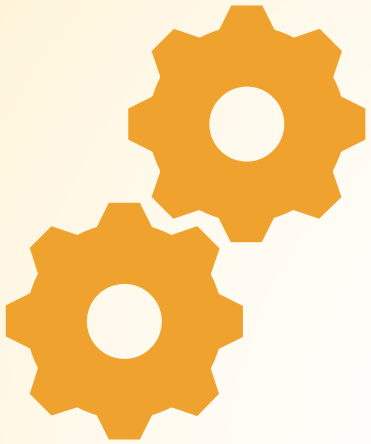
6-Test drive in a dedicated test area:

- Testing samples of cars to ensure the required quality and testing all systems on the track in different conditions.

Testing the **ID.4**

Testing the **ID.4**

Testing the **ID.4**



Step 4 : System Implementation

- ***WBS***

1	System Implementation	Duration	Start	Finish	Predecessors
7	Coding for creating the application	1 week	Wed 14/12/22	Tue 20/12/22	6
7.1	Test the success of the application	4 days	Wed 21/12/22	Sat 24/12/22	7
7.2	Installation the application	2 days	Sun 25/12/22	Tue 27/12/22	7.1
7.3	Digital manual	2 days	Wed 28/12/22	Sat 30/12/22	7.2
7.4	Introducing users and training them on it	4 days	Sun 31/12/22	Wed 3/1/23	7.3

System Implementation

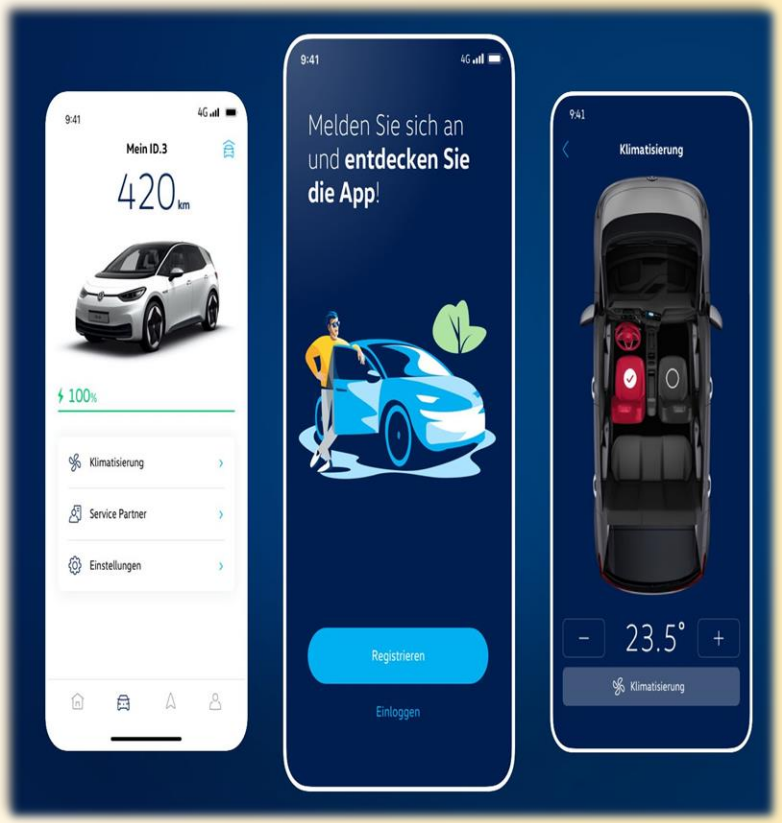
- In this phase the system specification are used to build the working system then tested before it can be put into use.

- During the testing programmers and analysts test individual programs and the entire system in order to find and correct errors.

- *We Connect Start*

- Connects you , Assists you , gets you to your destination with ease **(**This is ID.4 Software**)**.

- The We Connect ID4.app turns your smartphone into a remote control you can use to manage many useful vehicle functions ,So you can always keep track of your ID. even where you’re not inside it.



- ***We Connect*** (Cont'd)

An overview of the benefits for you

- Connected and internet-ready
- Access to many vehicle functions possible via the we connect ID4.app
- Use is free for the first three months

- *We Connect* (Cont'd)

A. *Charging…*

- The We Connect ID. app turns your smartphone into a remote control you can use to start and stop charging sessions with ease
- You can also keep track of remaining charging time, current range and charge level for your electric car – even when you aren't sitting in it.

- *We Connect* (Cont'd)

B. *Air Conditioning*

- Is it hot outside or freezing?? You can set your preferred temperature in you ID.4 using the app .
- You can start and stop your air conditioning system when your ID.4app is online OR set your preferred temperature for your desired departure time using your smartphone.

System maintenance

WBS : System Maintenance

WBS	Task name	Duration	Start	Finish	predecessor
1-	Trying to be perfective	5 days	Thu 4/1/2023	Mon 9/1/2023	2
2-	making update and corrective	1 week	Tue 10/1/2023	Mon 16/1/2023	3
3-	Adapt to the environment	4 days	Tue 17/1/2023	Fri 20/1/2023	2
4-	Programmers make the changes that users ask for	5 days	Sat 21/1/2023	Wed 25/1/2023	4
5-	Modify the system to reflect changing business conditions for fix	6 days	Thu 26/1/2023	Tue 31/1/2023	5

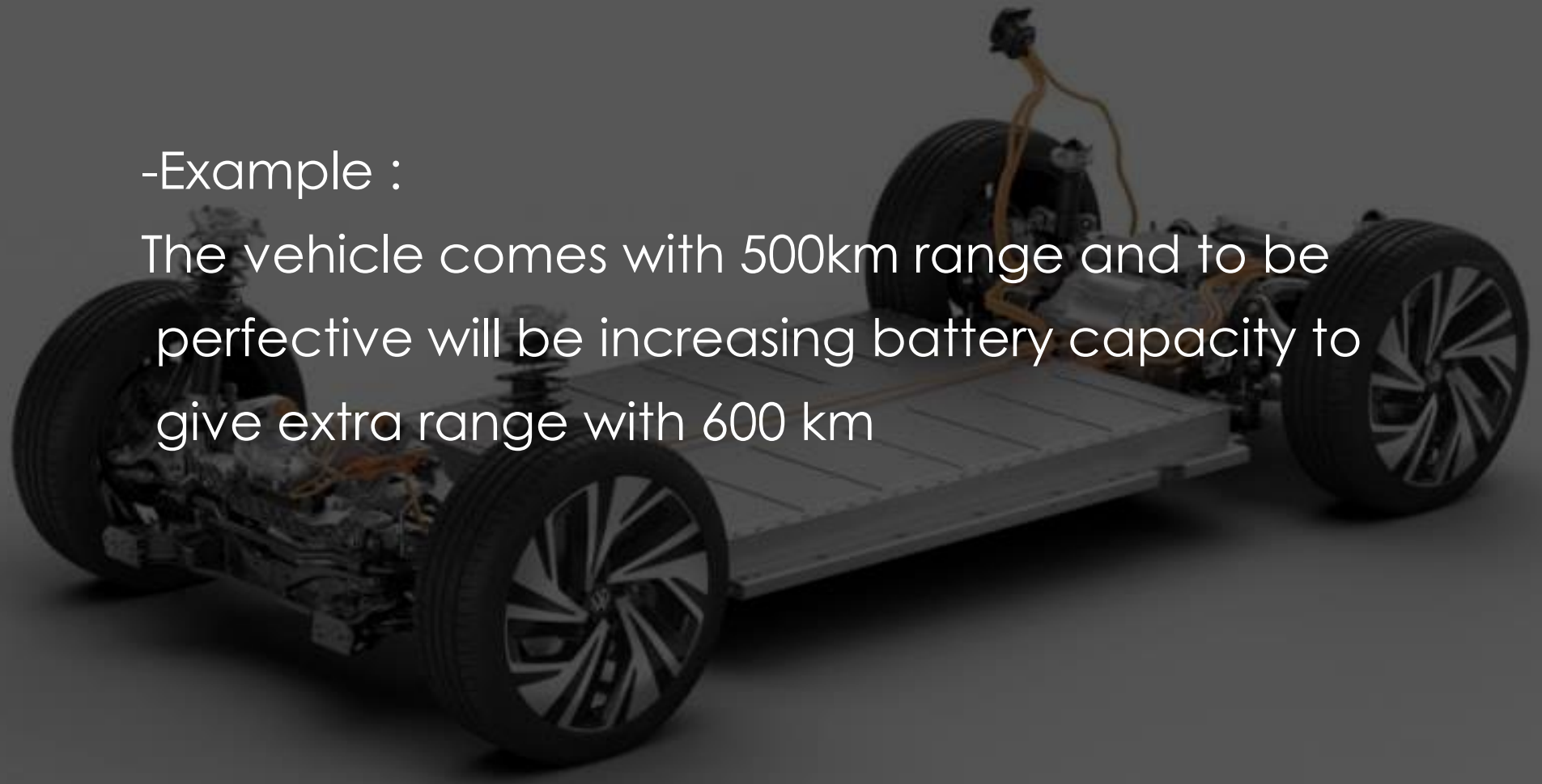
step 5 : Systems maintenance

Systems maintenance : can be regarded as an iteration of the SDLC. While a system is operating, users sometimes find problems with how it works and often think of improvements.

Last step : system maintenance

this phase closes the loop, in that the new system's performance is compared to preestablished KPIs, to determine if the system meets requirements in terms of performance, security.

Trying to be perfective

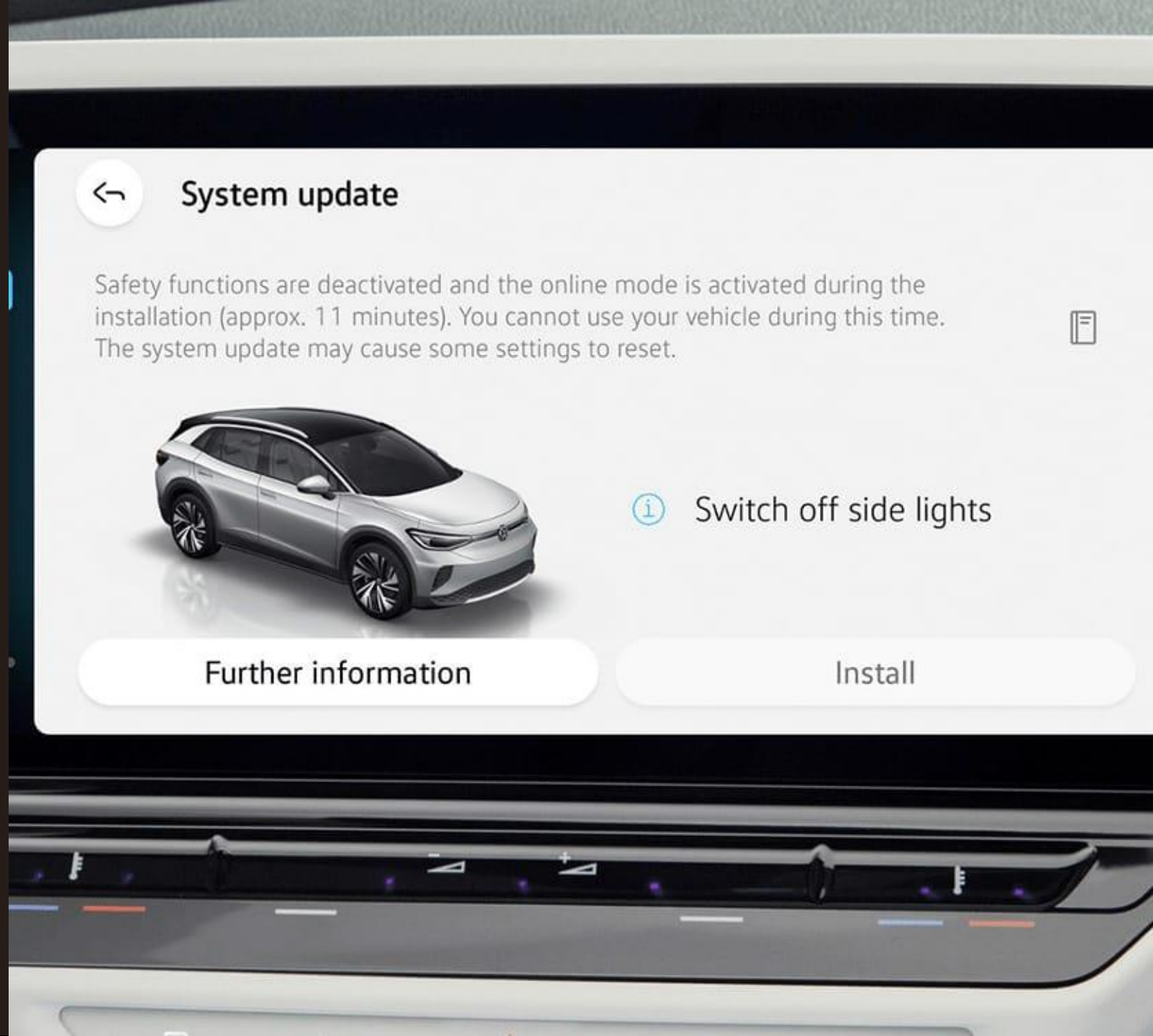


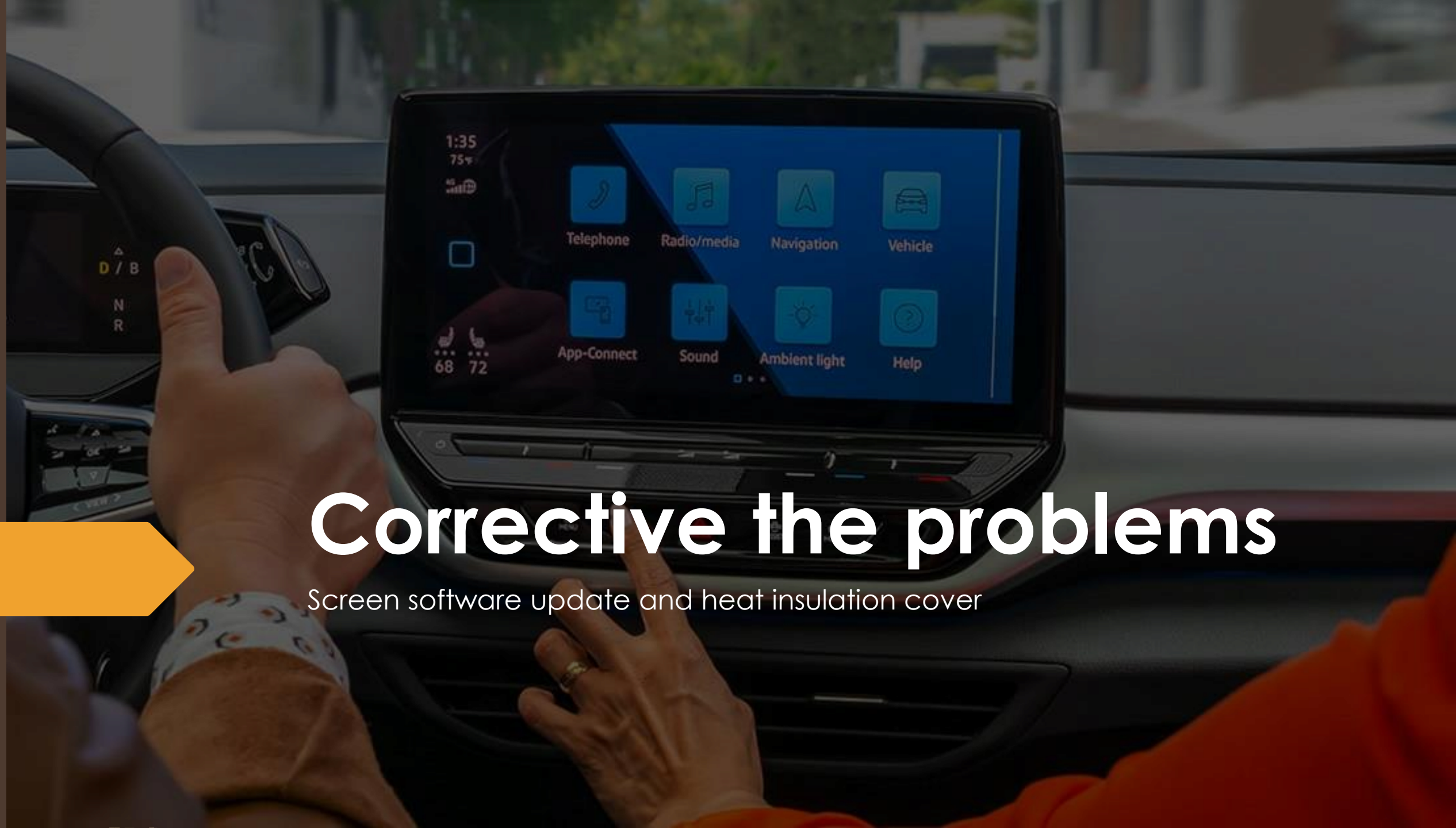
-Example :

The vehicle comes with 500km range and to be perfective will be increasing battery capacity to give extra range with 600 km

Making update

- An update is sent to the vehicles every once in a while, to keep the car systems up-to-date and avoid any future problems that may occur with vehicle's systems





Corrective the problems

Screen software update and heat insulation cover

Thank you