

# Transforming experience through connected vehicle mobile app

CASE STUDY

30 JUNE, 2023

A French automobile manufacturing company

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## PROJECT BACKGROUND

### About client

A French-based automobile manufacturer, well known in Europe for its compact and innovative cars. It aims to produce affordable cars for the masses that focus on delivering value. The global company decided to expand its horizon by entering into emerging Indian market.

### About Project

The client aimed to disrupt the Indian market by creating a digital experience that complements the vehicle's distinguishing physical features. They strive to stand out and capture the market by adopting cutting-edge technologies for connected space.



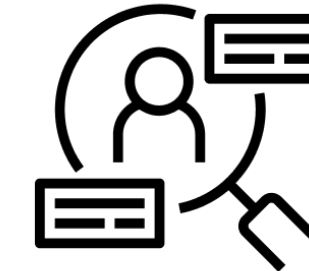
## OUR APPROACH



**Business Insights**



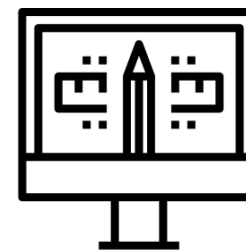
**Desk Research**



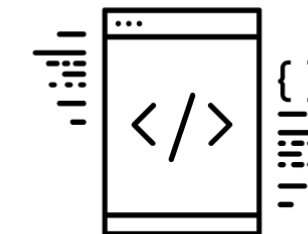
**Competitor Study**



**Concept Design**



**Detailed Design**



**Front end Development**



## GOALS

# Business Goals

- Launch EV vehicles in the Indian market to deliver competitive value to customers.
- Build highly sophisticated bi-directional communication system between vehicles, other devices and infrastructure for customer and vehicle safety.
- Establish customer base, increase brand loyalty, customer retention & advocacy.





## GOALS

# Product Goals

- Establish an off-car connectivity between the user & car.
- Provide better and safer driving experience
- Enable customers to remotely operate car functions
- Enable user to monitor vehicle health with just one touch
- Keep customers informed by providing timely information and updates
- Analyze driving behaviour and suggest improvement
- Personalises premium calculation basis customers driving behaviour & other parameters





## GOALS

# Design Goals

- Ensure to cater the needs & expectations of Indian Audience
- Design to be in line with Brand ethos of “Inspired by You” along with brand pillars of - Comfort, Cool & Clever
- Minimise the learning curve and enable users to start using the app from the get go.
- Drive usage & adoption via minimalistic and intuitive design
- Allow users to take relevant actions in fewer clicks





## GOALS

# User Goals

- **Control & monitor vehicle status** remotely.
- Get alerts about the possible car theft.
- Get personalised recommendations based on driving behaviour.
- Monitor car health to diagnose possible issues in advance.
- Locate the car remotely, find nearby service stations and charging stations.







# Competitive Research

UX Strategy, Functionality, Visual Strategy & Performance

# COMPETITIVE RESEARCH SUMMARY

## UX Strategy

- Seamless assistance in mobility experience with mobile app & in the car.
- A personalised ecosystem created between the connected app and the car
- Support to multiple User logins restoring their respective personalised settings
- Extending the boundaries of community collaboration and integration.
- Collaborated behaviour between the Connected app and website

## Functionality

- Auto-pilot OR Self-Driving Capability improves existing functionalities to make the car more capable over time.
- Various types performance modes to improve performance
- Smart use of energy based on climate control.
- Features like 'Auto-park' and 'Summon' help in time saving for the user

## Visual Strategy

- A dark background with neon colour scheme for UI elements, to make them stand out.
- A strategical distribution for console and physical dashboard buttons
- Map Navigation screen behaves as home screen on console, while all other app windows are lay over
- Avoiding of Day & Night UI view for the app and Console as the brighter UI might cause distraction.

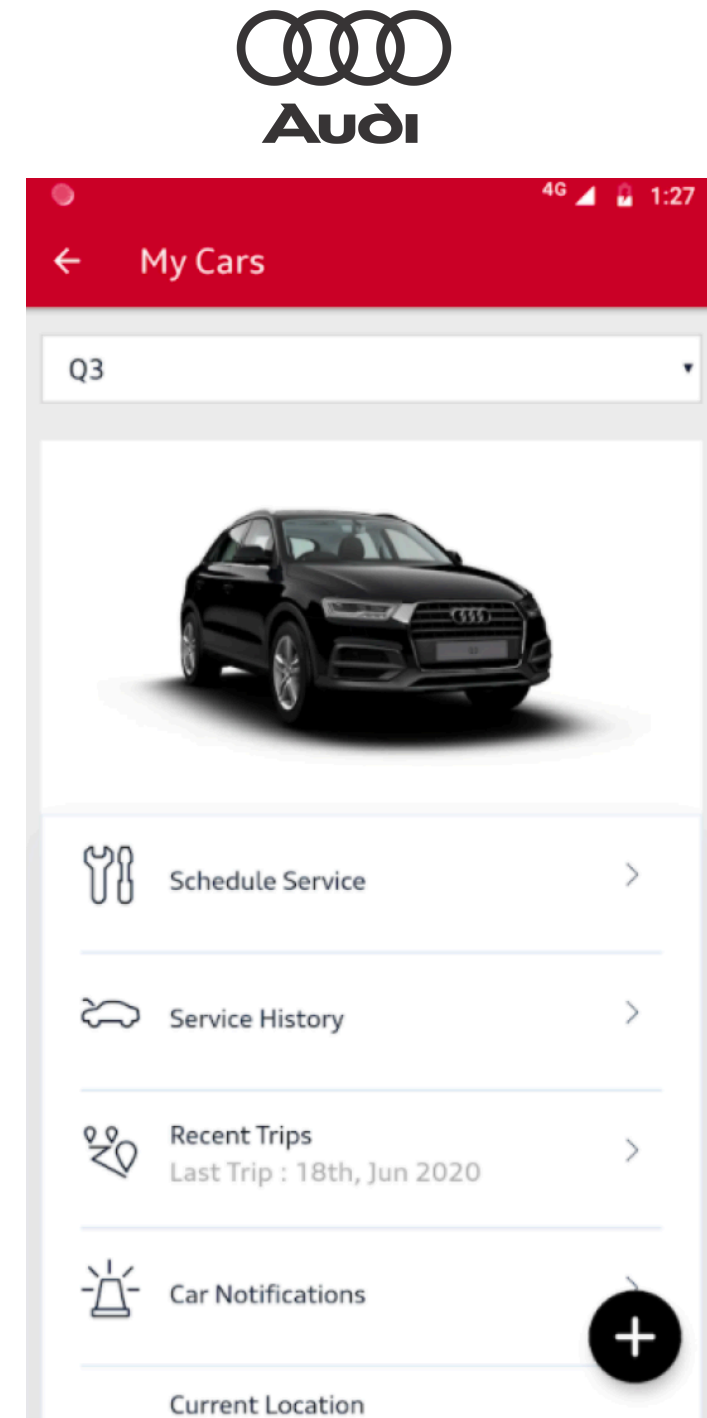
## Performance

- The car can be unlocked using NFC feature
- The smart phone connects within 15-20 secs response (depending on best connectivity)

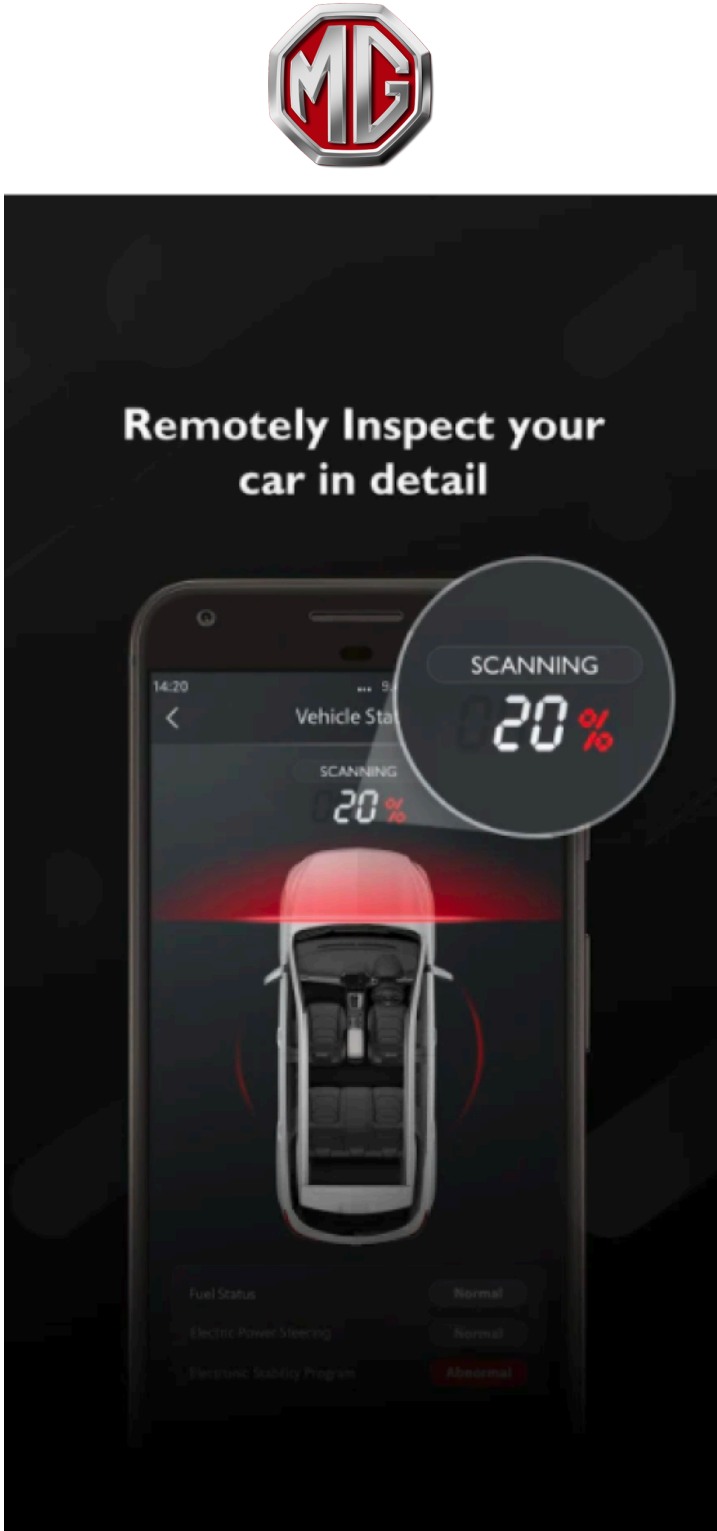




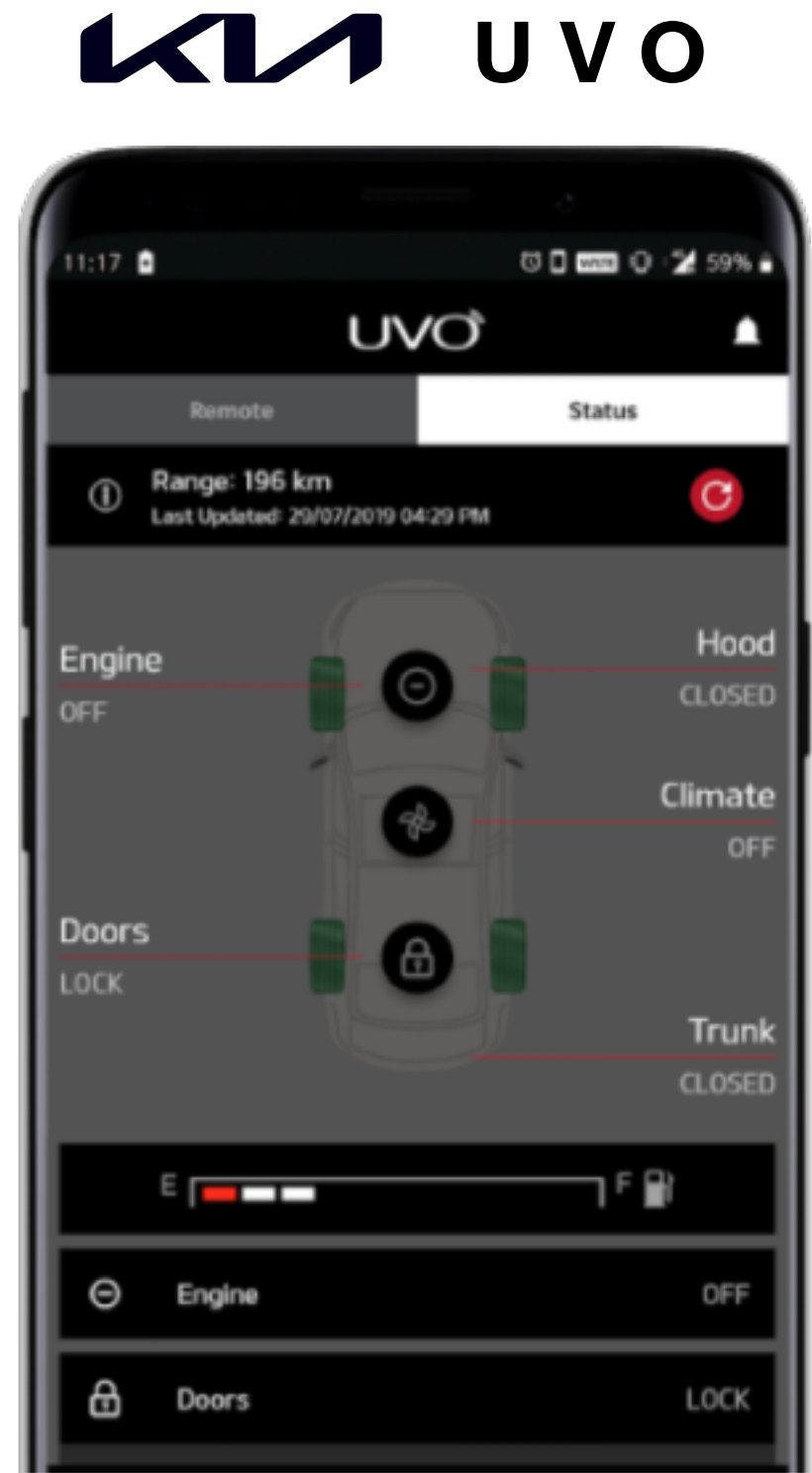
# COMPETITIVE RESEARCH SUMMARY



- Easy access to critical tasks
- Inducing Behaviour Change - Actionable insights presented upfront
- Gamifying the behavioural change through social intervention

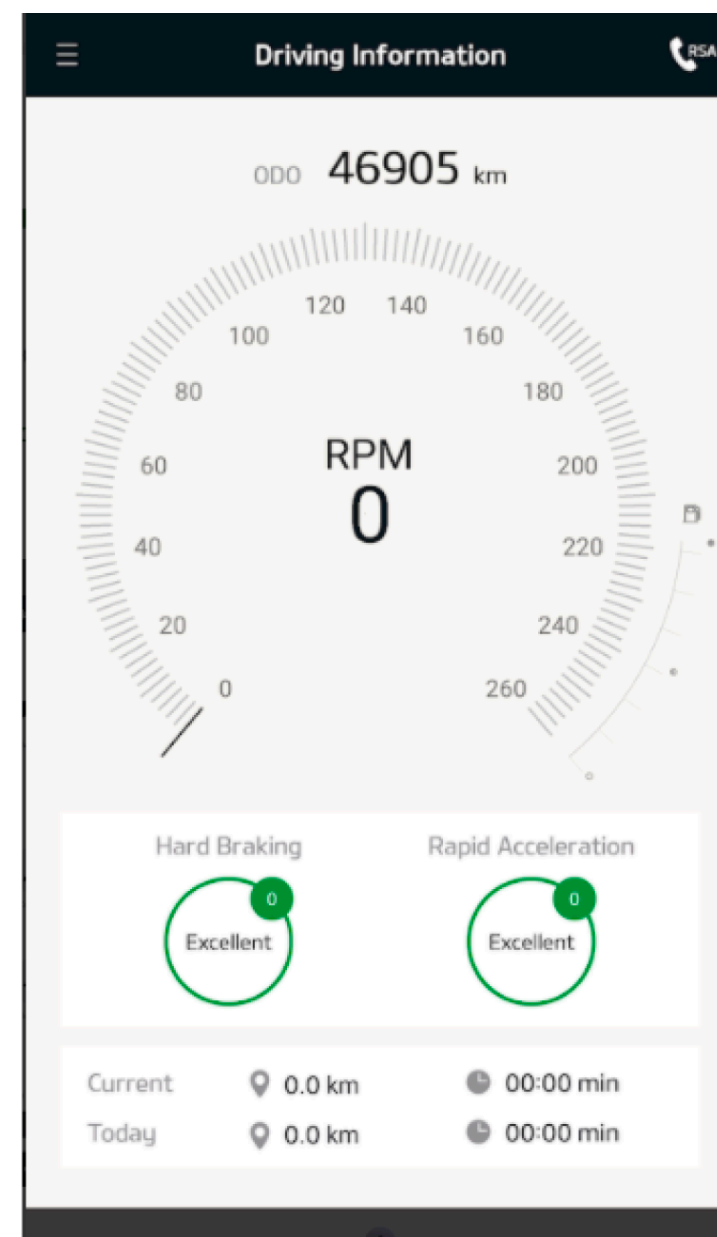


- Mimicking the real world experience
- Good micro interaction
- Clear status indicator with use of colours
- Setting up timely alert

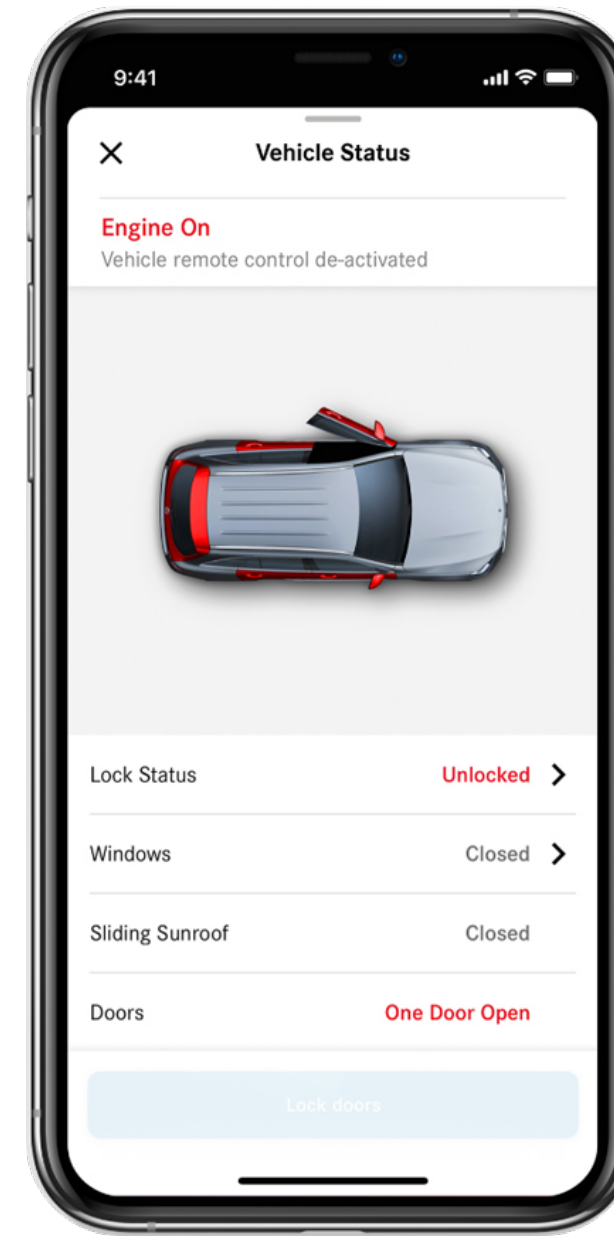


- Feature heavy - multiple car controls available
- Every trip detail page show details of driving behaviour and Fuel efficiency
- Vehicle Health Report showcases various aspects of vehicle like Engine on-Time, Speed, Braking, Airbag, Turns, Power train

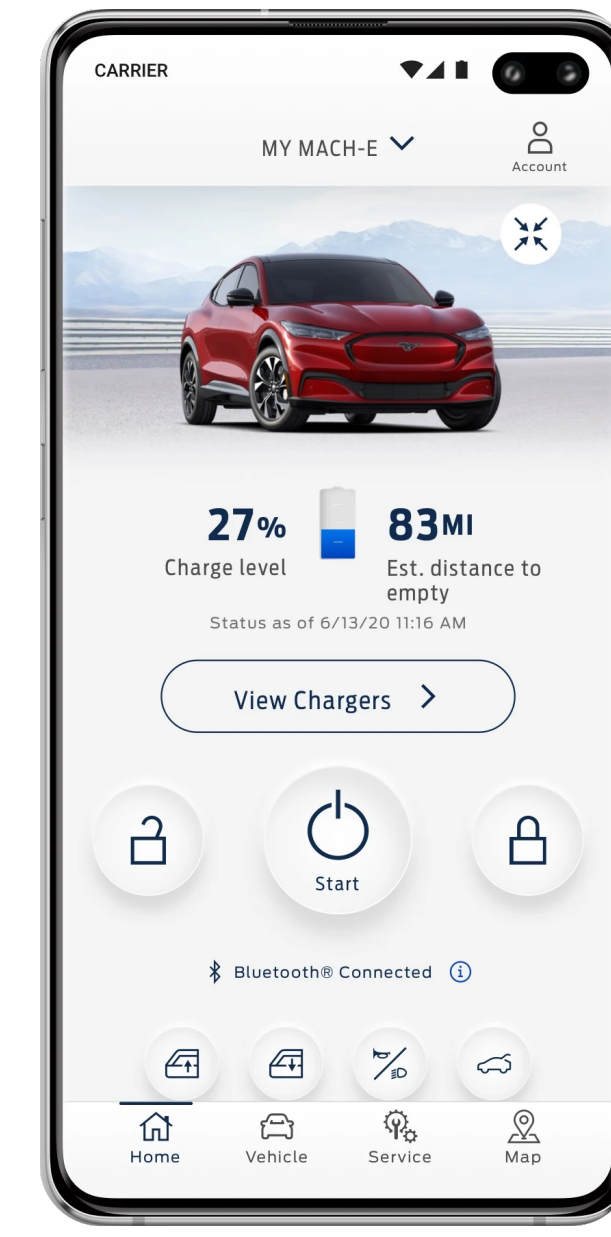
# COMPETITIVE RESEARCH SUMMARY



- Dashboard specific to driving details helps to monitor driving quality with history
- Live odometer reading and driving behaviour stats
- In-app feature to book a service appointment



- Clear call to action, minimalistic designs
- Minimal navigation with location sharing option
- Good use of typography to highlight the critical information



- Neumorphism in user interfaces for good affordance
- Key information and CTA for a car is presented compactly
- User specific information under one umbrella



# User Personas

Expectations, Aspirations, Motivations, Pain Areas and Preferences



# PERSONA - EV USER



## Ashutosh Dhavle

*Owns Mahindra E2O*

- 1. Works in Pharma as a Sales Representative
- 2. Drives E2O for last 4yrs (2 Door)
- 3. Daily commute to work and meetings is of ~60 - 80 Kms
- 4. Plan to optimise his work during driving from one destination to another.

### Expectations

- Ashutosh needs more mileage in the given charge to reduce his charging halts and save on time.
- He will be glad to have more number of charging stations on highways as he majorly travels inter cities.
- Ashutosh would want some provision to reserve charge, like in IC cars, which can be used during emergency.

### Performance oriented

**Personality** - *Ambitious & High Performing*

### Motivations

- He would like if the navigation system can helps him detect the parking slots, charging stations, hotels, etc in the nearby area.
- He wants the app to suggest appropriate options that helps his travel easy and safe. For eg: sending timely alerts for upcoming meeting agendas, charge status & weather updates.

### Needs

Safety

Efficiency

Familiar

Transparent

Fast

PERSONA - NON EV USER



Ananya Joshi

*Owns Maruti A-Star*

- 1. Ananya is a mother of two, who manages multiple roles in her family
- 2. The major tasks of her day revolve around her kids and house hold chores.
- 3. She is an extremely care giving person who wont compromise on any safety measure for her family.

Expectations

- Ananya is bit skeptical when it comes to EV and needs assurance for a proper infrastructure and service provided.
- Its important for her know the security and safety measures of the car for long distance & city drives drives
- A drill check about car’s state, fuel, tires, etc every time before stepping into the car, keeps her mentally at peace.
- 

Tech Enthusiast

Personality - *Caring, Sensitive, Cautious*

Motivations

- Ananya requires to have timely notifications & Alerts about the car performance and updates
- She will be happy to have the other IoT devices connect with her car

Needs

Smart

Simple

Secure

Robust

Intuitive

## USER TASKS

### Remote Commands

- Turn on Position Lamps
- Lock/ Unlock the car
- Turn ON/OFF A/C
  - a) Set duration between 1-30 mins
- Create A/C schedule
  - Set start time
  - Set duration
- Edit A/C Schedule
  - a) Start time and duration
- Delete A/C Schedule
- Stop AC Schedule
- Defer the charging

### Vehicle Statuses

- View the Head Lamp Status
  - a) View Low beam status
  - b) View High beam status
- TPMS status
  - a) Monitor tyre condition of all four tyres
  - b) View status of all four tyres
  - c) Check details if there is an alert
  - d) Get notified about critical condition





# User Research Insights

India & USA user findings



## USER RESEARCH INSIGHTS

- Build trust by keeping users informed
- Provide comfort & control
- Personalisation gives a satisfied driving
- Stay safe & be secured
- Post purchase delight
- Value for Money





# Concept Model

Users are informed at all times about battery status, and available charging stations. 1-touch access to 80% functions and design that caters to a wide range of Indian users.



In India, often vehicles are driven by multiple people (drivers, relatives, friends). Multiple remote functions help you keep your loved ones safe and secure.

Analysis of driving behavior and feedback and car health diagnosis helps users to improve driving patterns and car condition.

The platform automatically detects threats, accidents other incidents to alert the owner and take appropriate time-sensitive actions



# User Tasks, User Journey & IA



## USER TASKS

### Remote Commands

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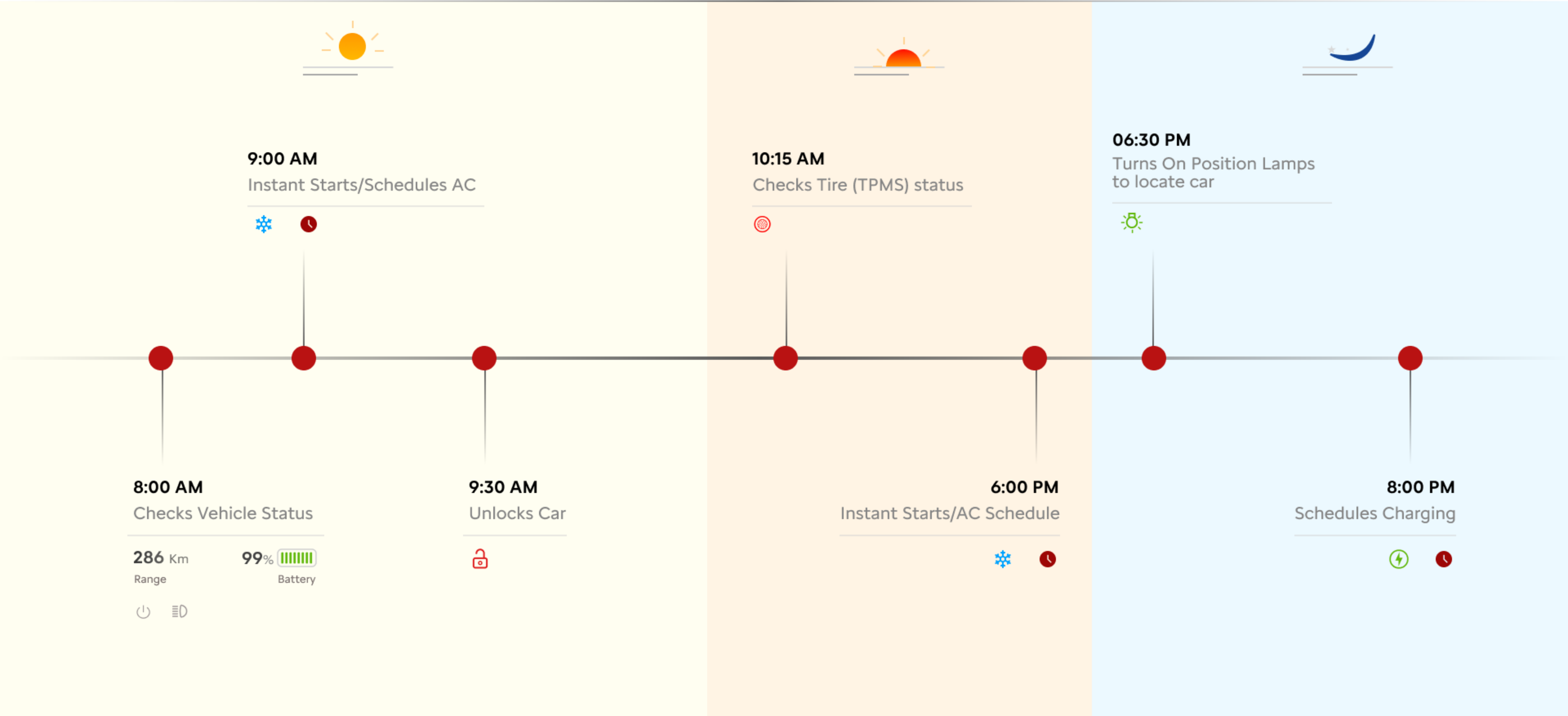
# Journey

User: Ramesh Mehra  
Age: 45

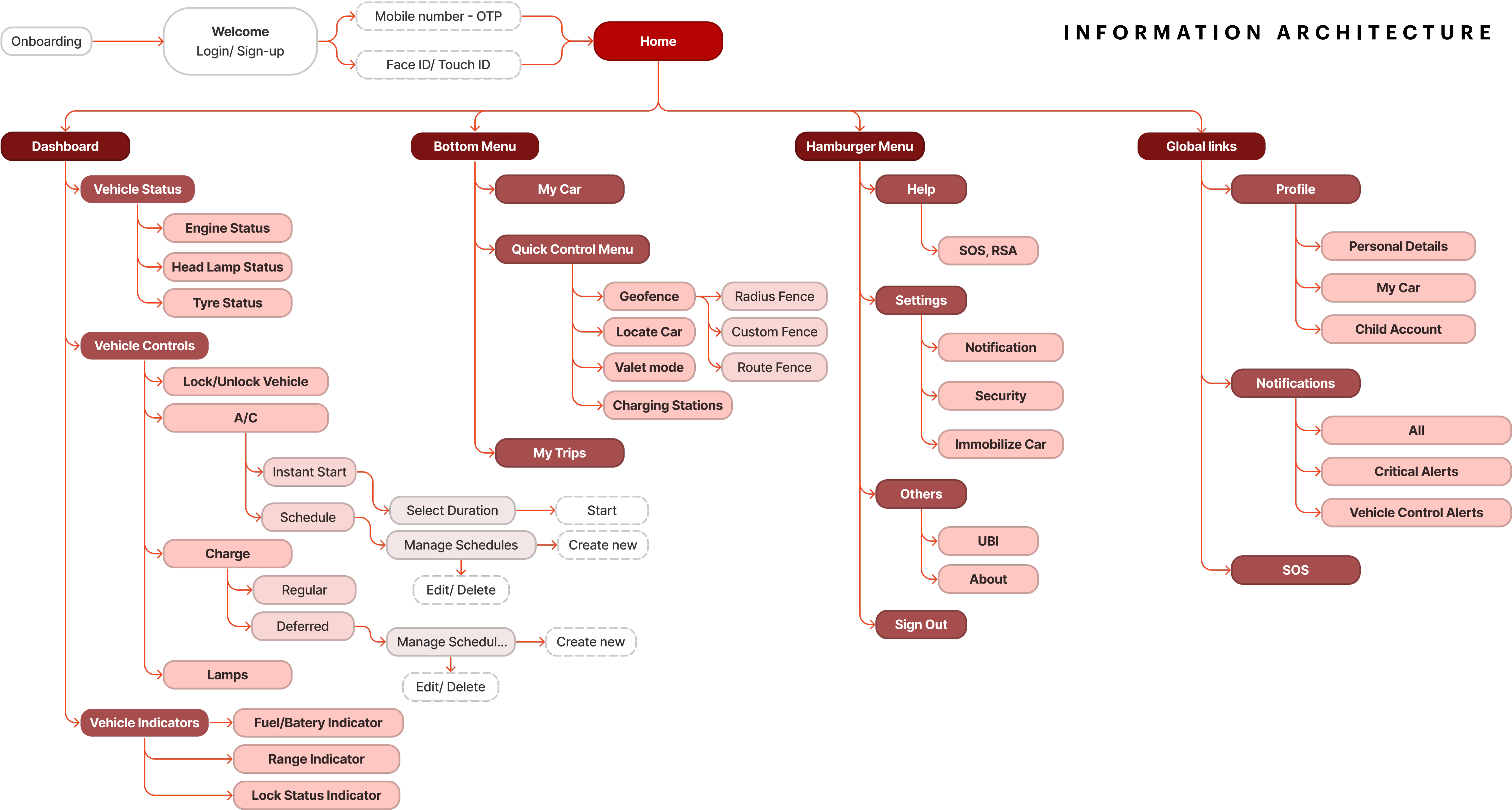
- Organized
- Planning
- Disciplined
- Fitness Enthusiast

Ramesh is a 45-year-old corporate worker who embodies the essence of discipline and timeliness. With his crisp business attire and neatly groomed appearance, he exudes an air of professionalism. John's punctuality is legendary among his colleagues, as he arrives at the office precisely at the designated time every day.

Ramesh's love for planning extends beyond the workplace. He thoroughly enjoys meticulously preparing for events and activities in his personal life.





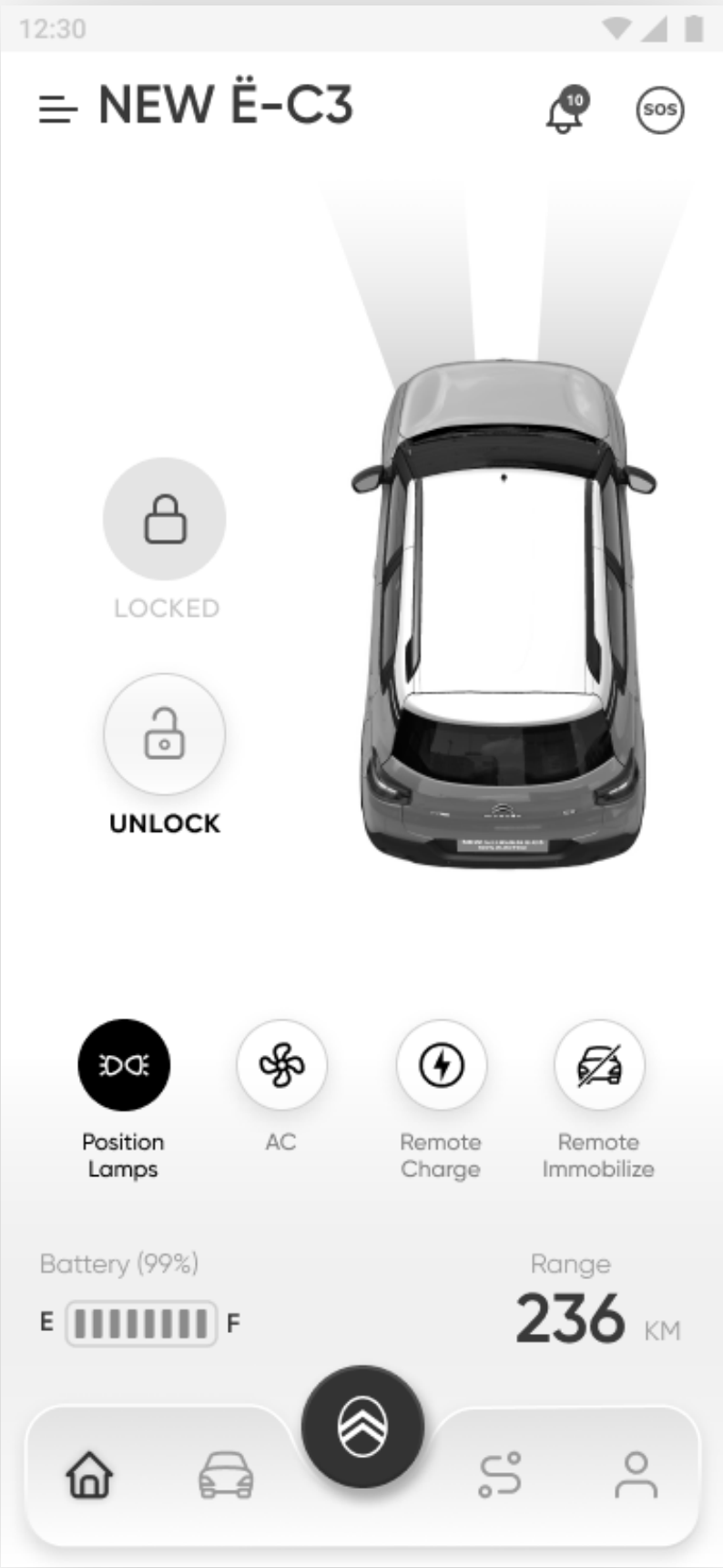


WIREFRAMES

For EV Users

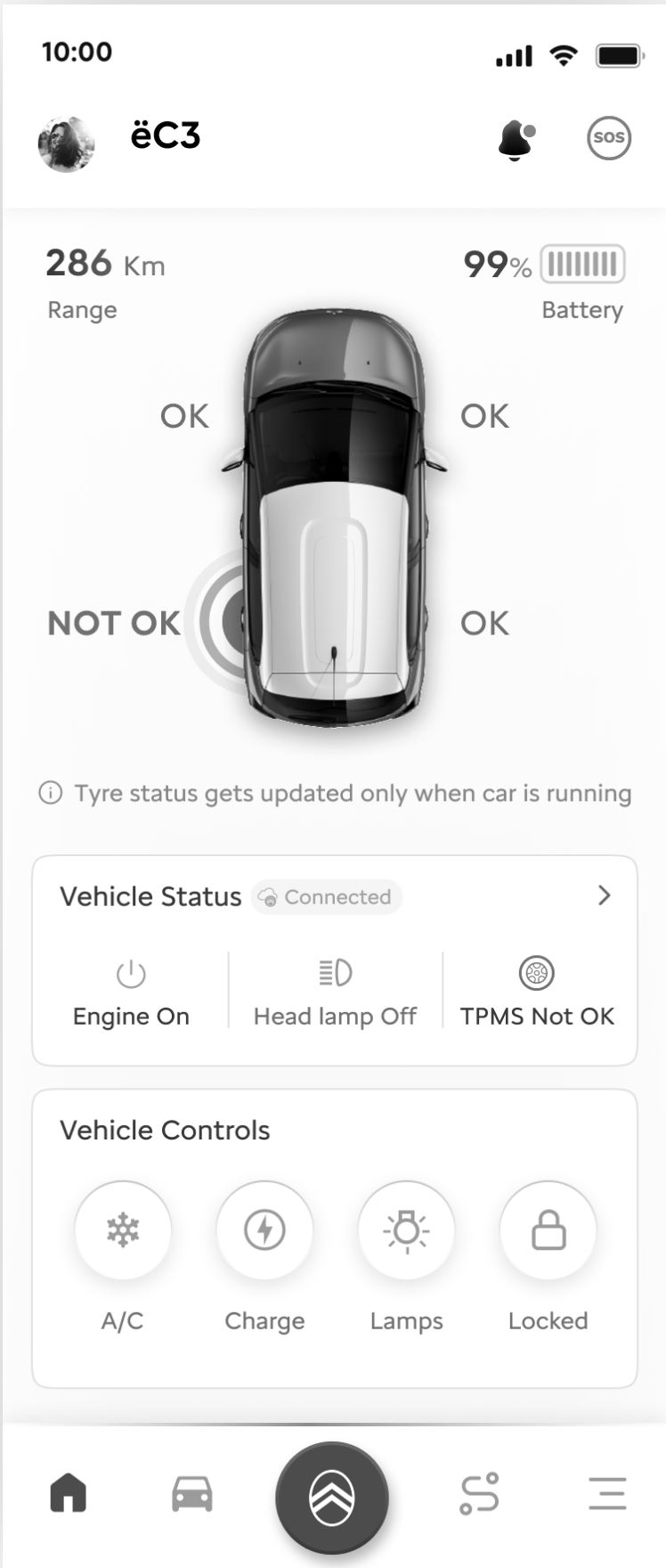
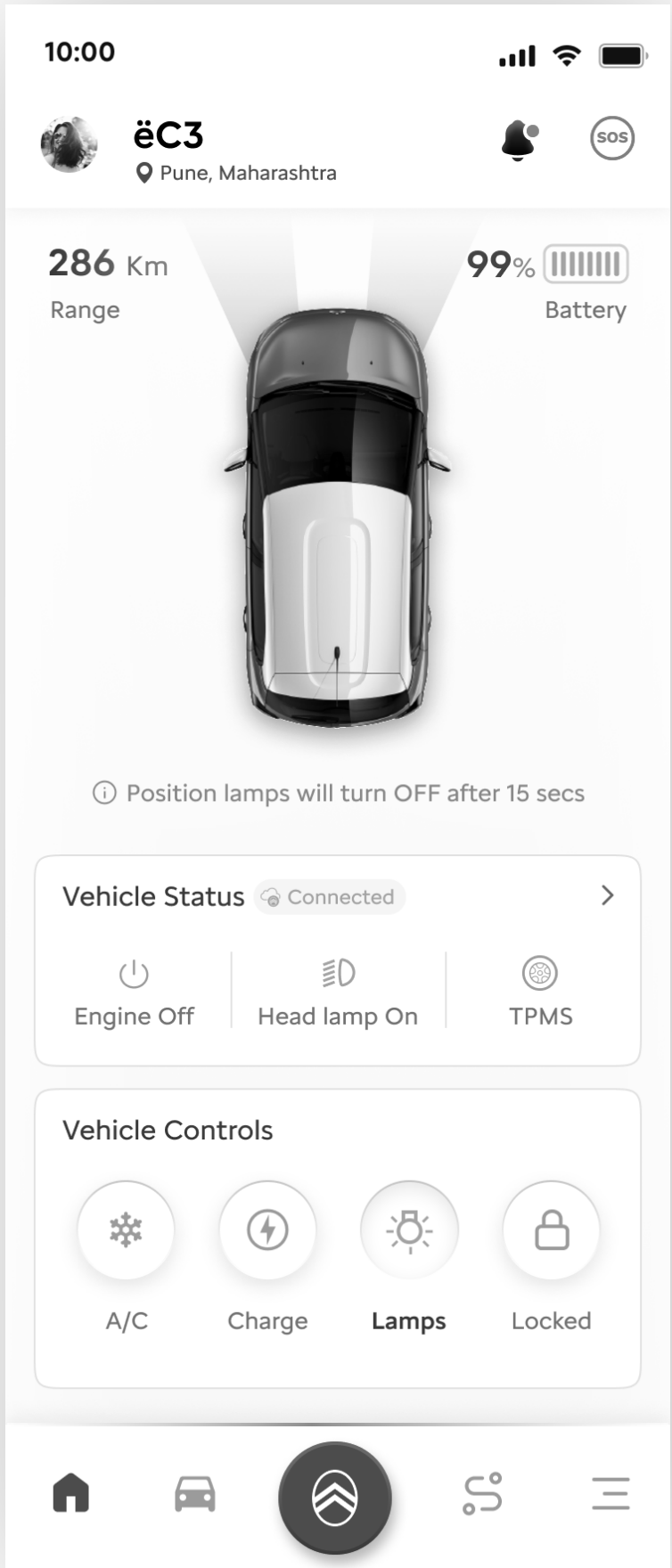
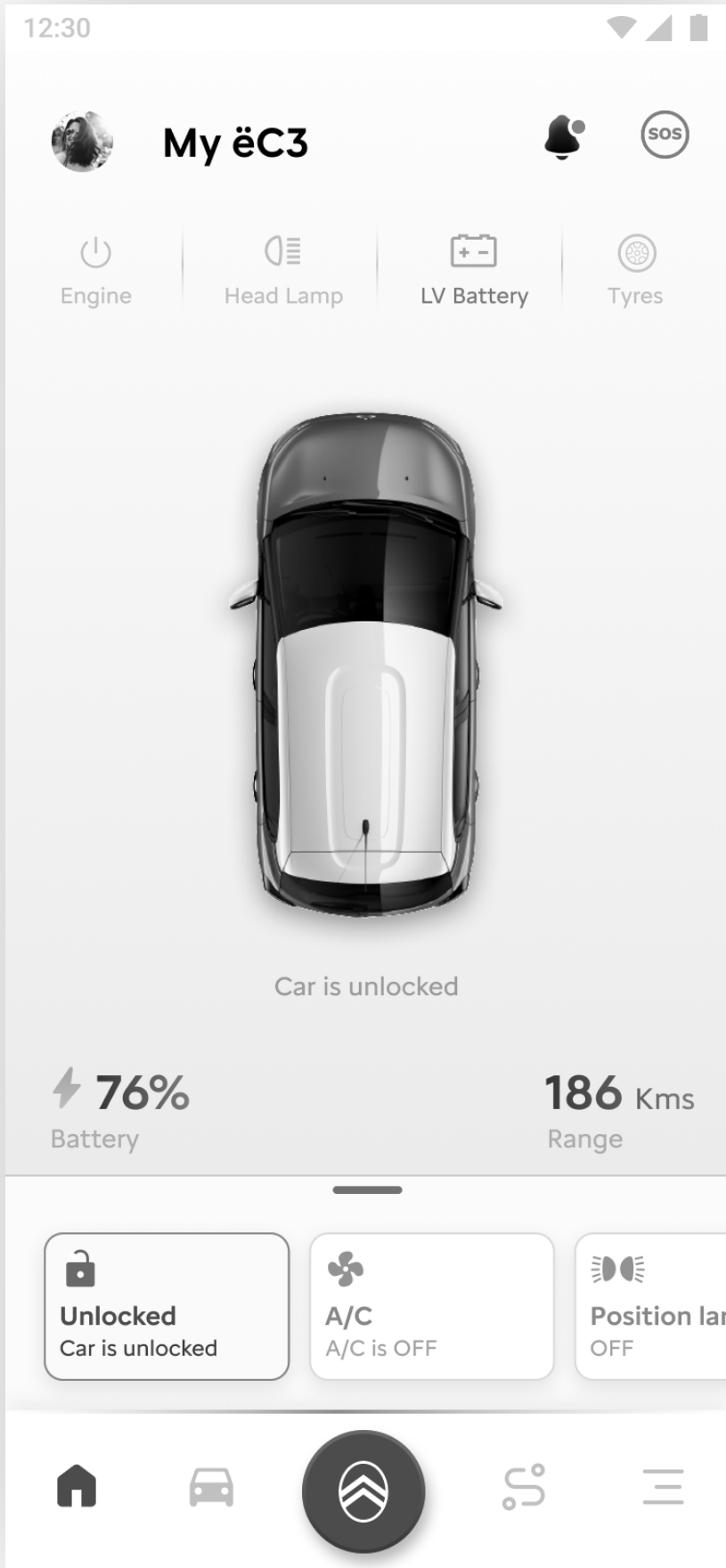
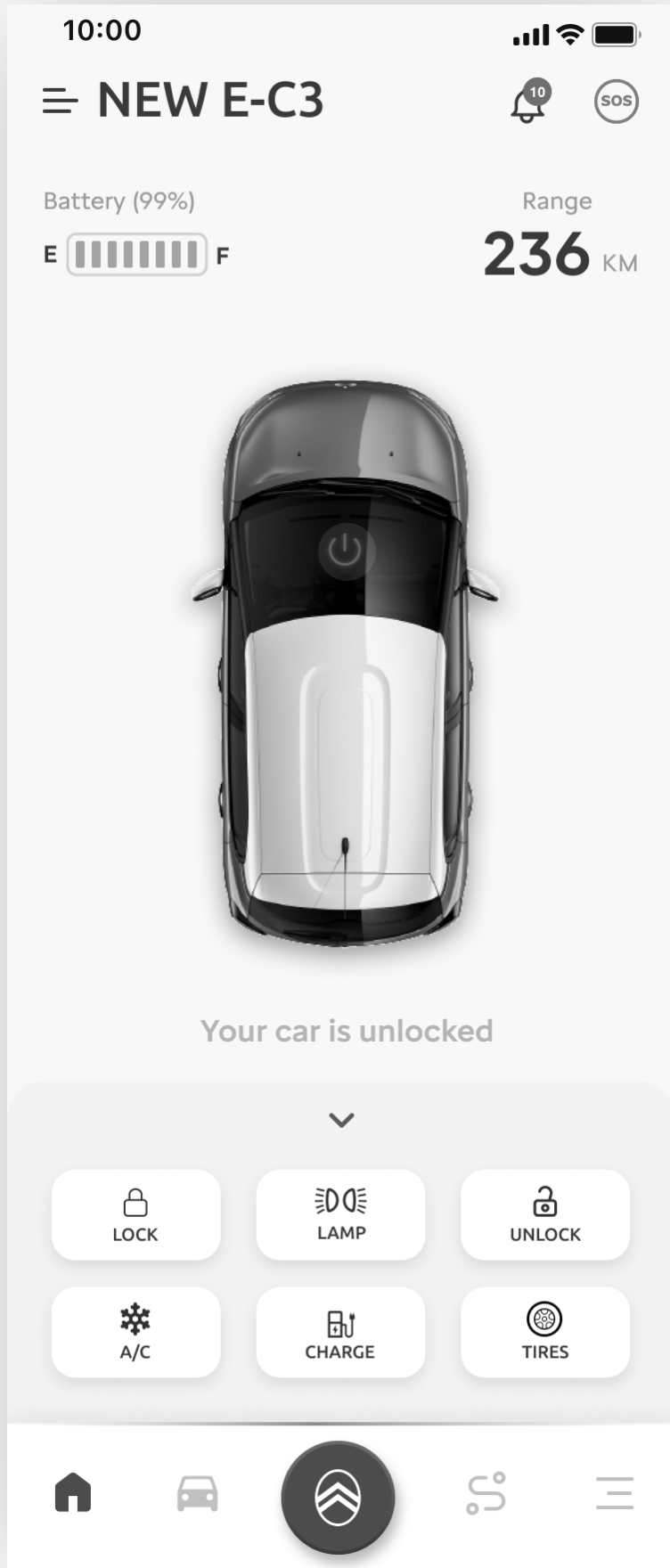
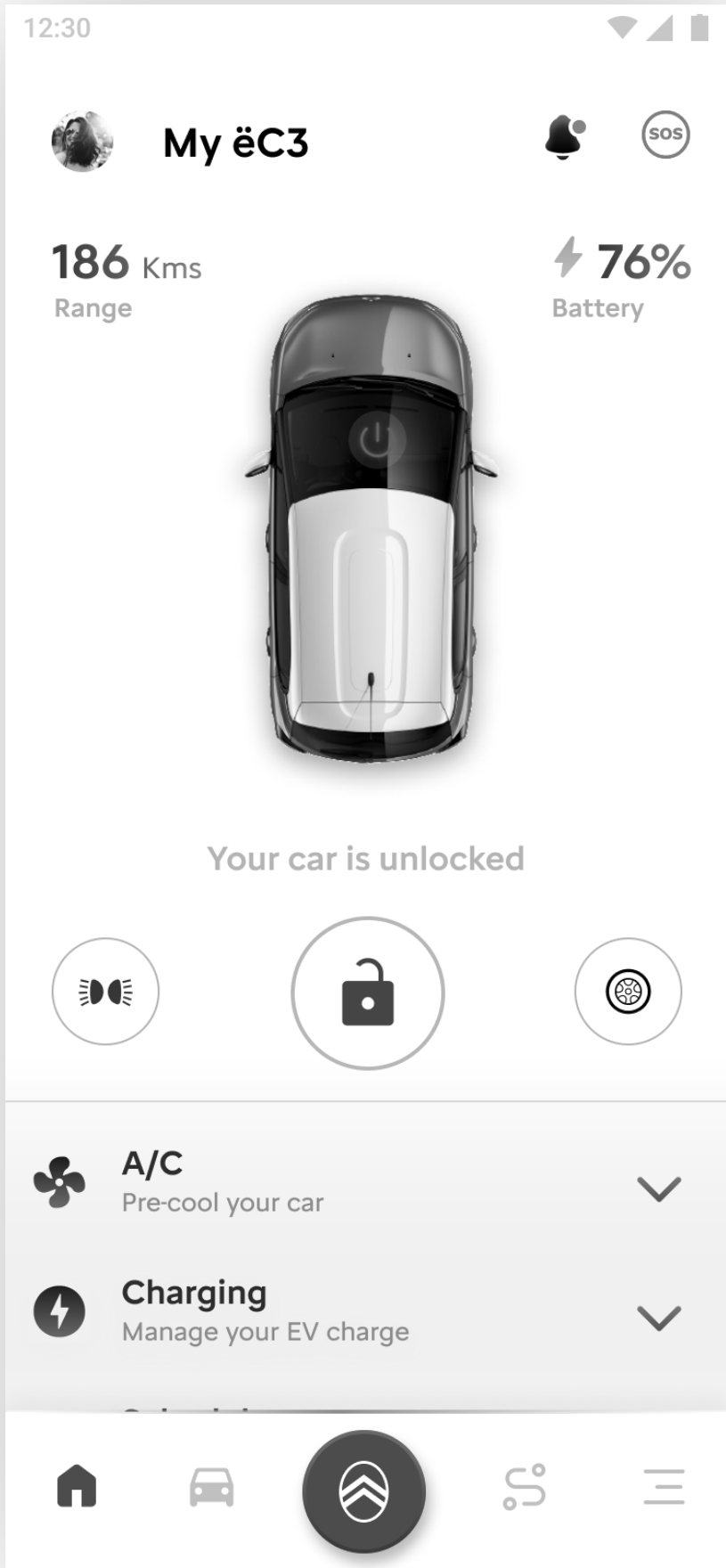


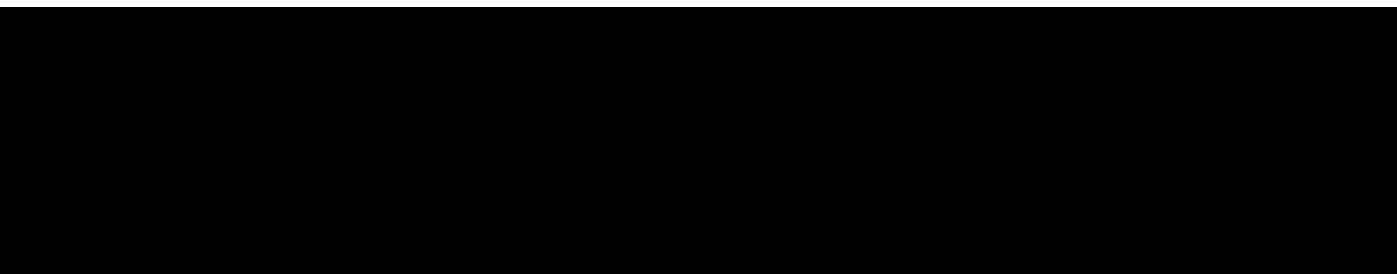
For PV Users





WIREFRAMES

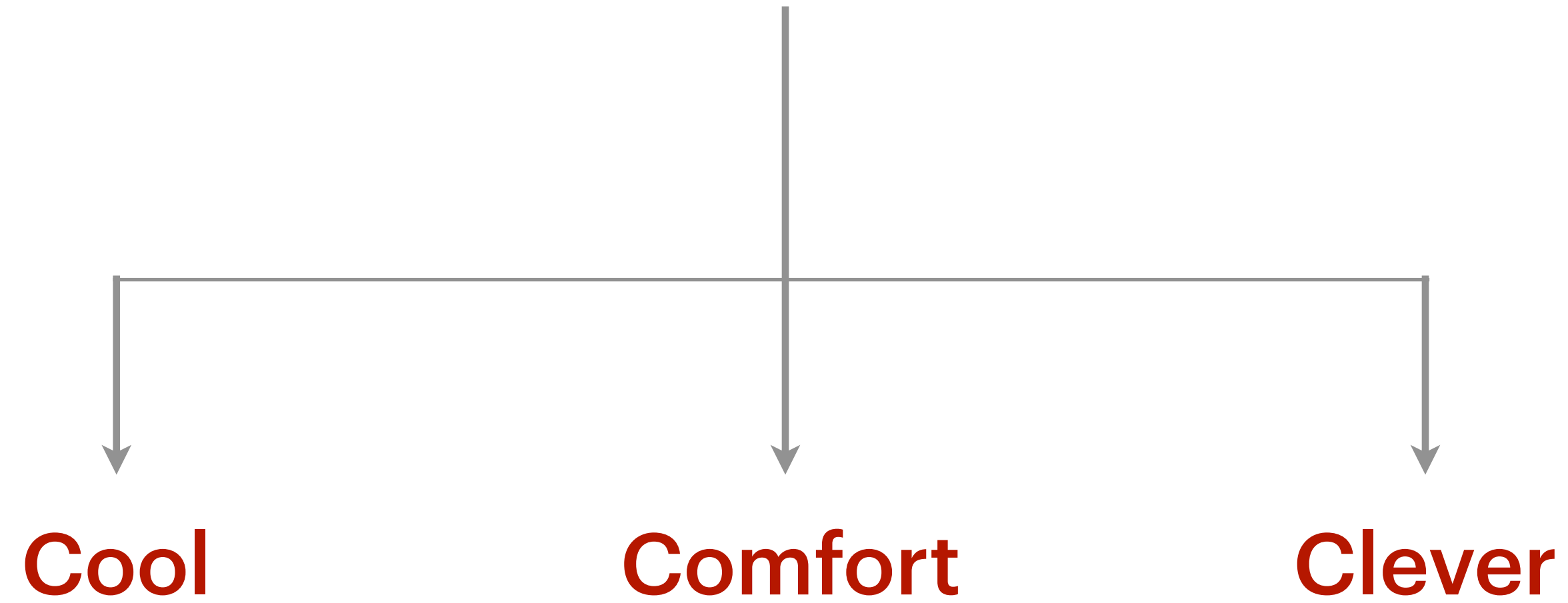




# VX Strategy & Visual Concepts

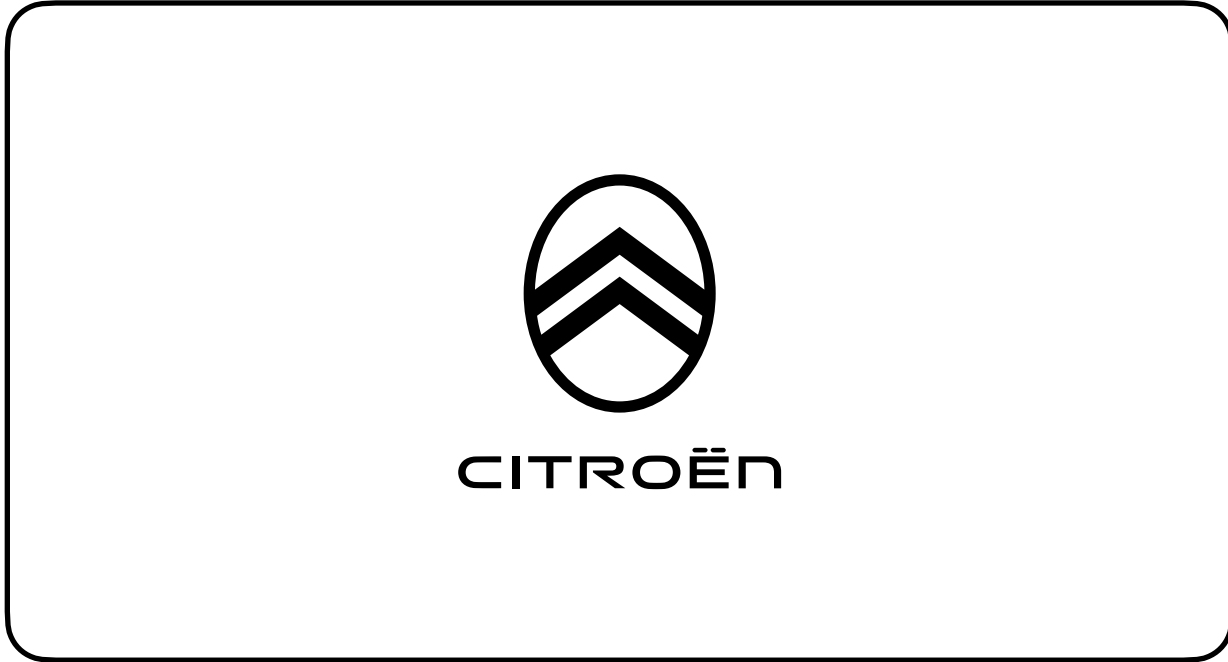


# Visual Experience Design Strategy


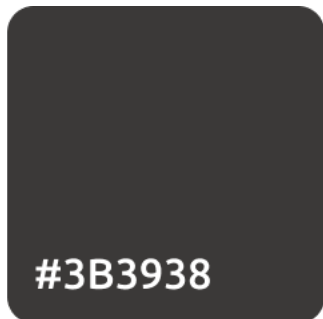
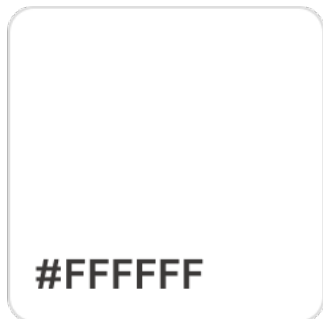



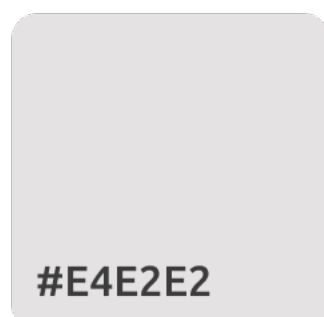
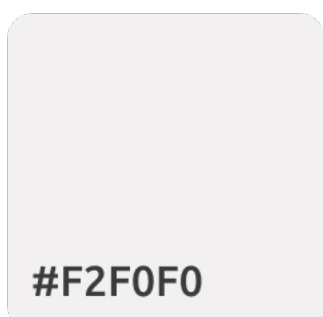





Logo on different background colours



Recommended Colour Palette

 <b>#9D0605</b> RED Primary Color_1	 <b>#3B3938</b> DARK GREY Primary Color_2	 <b>#FFFFFF</b> WHITE Primary Color_3
 <b>#796F6E</b> HOT GREY (100%) Secondary Color_1	 <b>#A09999</b> HOT GREY (70%) Secondary Color_3	 <b>#CAC6C5</b> HOT GREY (40%) Secondary Color_3
 <b>#E4E2E2</b> HOT GREY (20%) Secondary Color_4	 <b>#F2F0F0</b> HOT GREY (10%) Secondary Color_5	 <b>#F5F5F5</b> LIGHT GREY Secondary Color_6



# Typography

Aa

Primary Font: CITROËN TYPE

MEDIUM

REGULAR

## Recommended Font Style

H1 PAGE TITLE/ CITROËN TYPE MEDIUM/ 32PX

H2 BLOCK TITLE/ CITROËN TYPE MEDIUM/ 22 PX

H3 BLOCK SUBTITLE/ CITROËN TYPE MEDIUM/ 16 PX

P1 Paragraph 1/ CITROËN TYPE MEDIUM/ 18 PX

P2 Paragraph 2/ CITROËN TYPE MEDIUM/ 16 PX

P3 Paragraph 3/ CITROËN TYPE REGULAR/ 16 PX

P4 Paragraph 4/ CITROËN TYPE REGULAR/ 14 PX

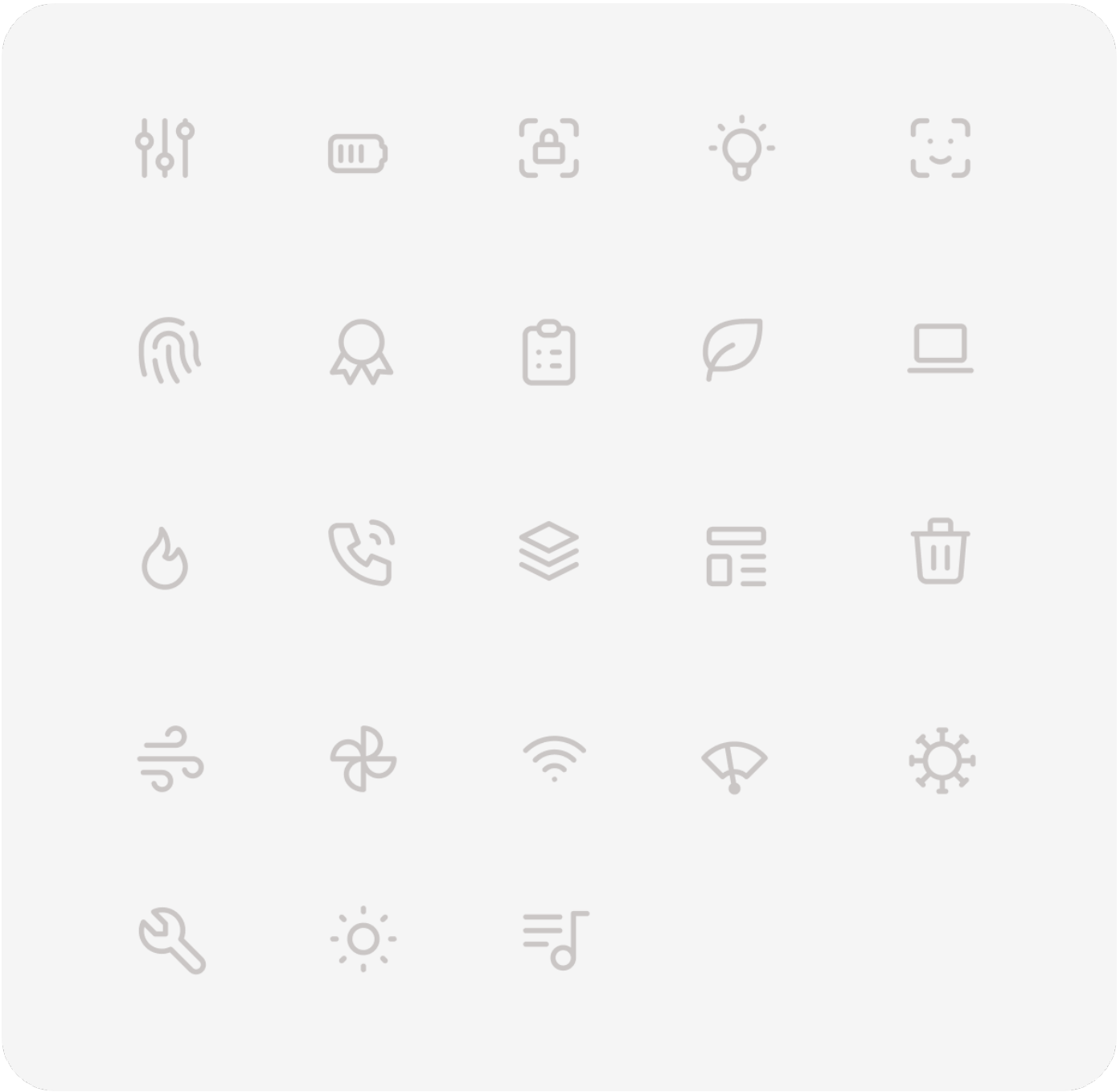
P5 Paragraph 5/ CITROËN TYPE MEDIUM/ 14 PX

P6 Paragraph 6/ CITROËN TYPE MEDIUM/ 12 PX

# Iconography

## Recommended Icons style

Deriving from the theme 'comfort' icons used are smooth edged linear icons



Icons at bottom nav





# Imagery

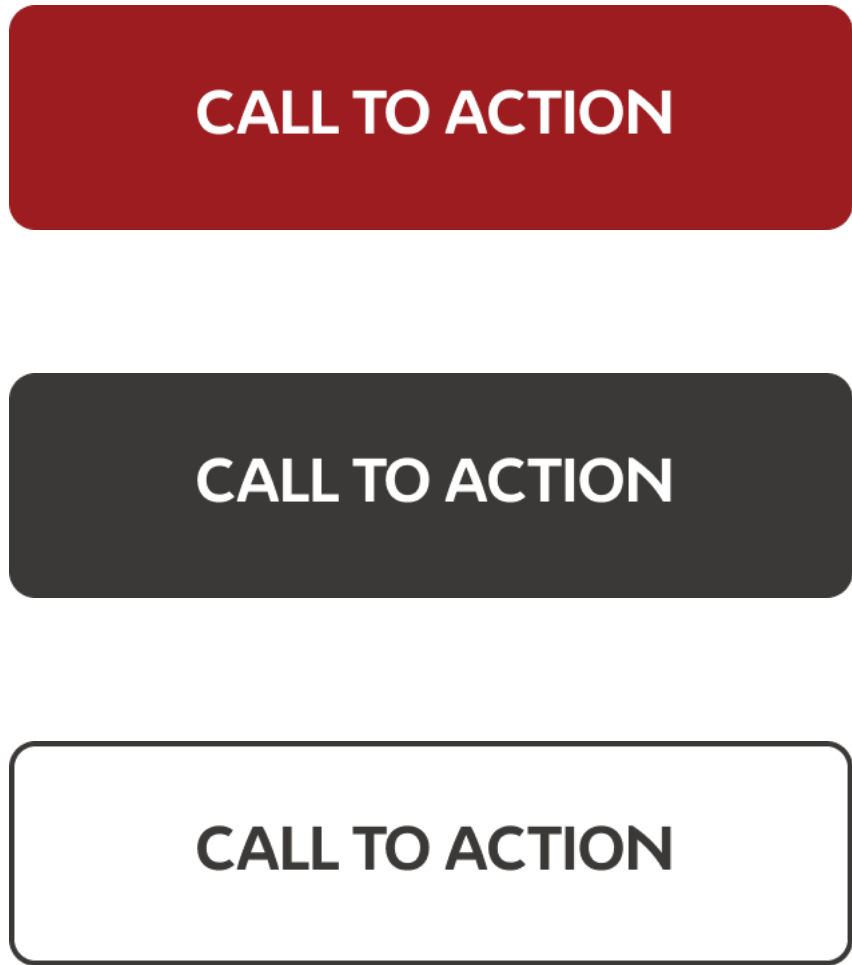
## Images used

Citroen car images in different angles are used as imagery.

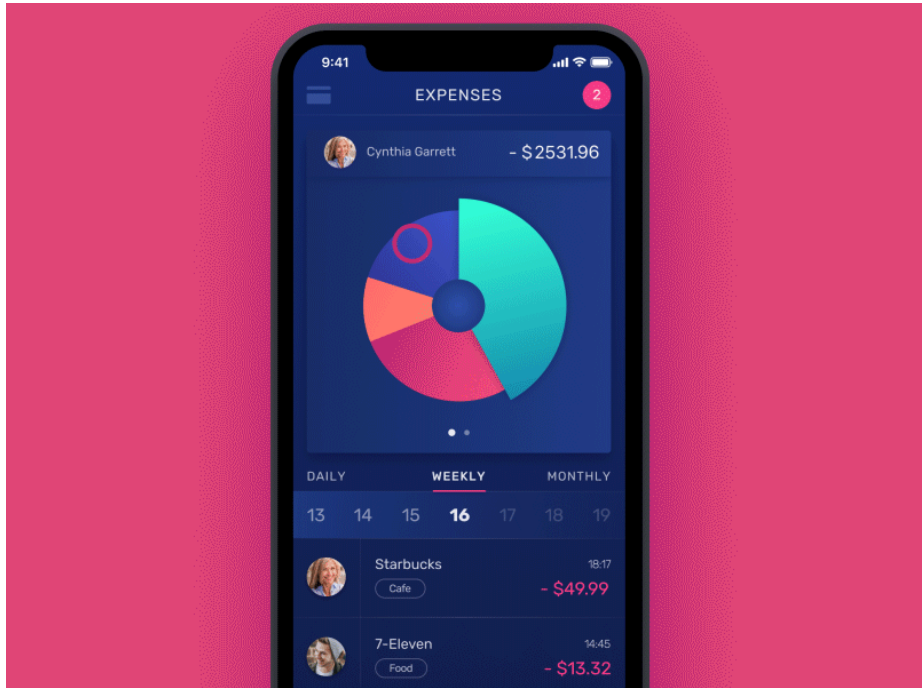
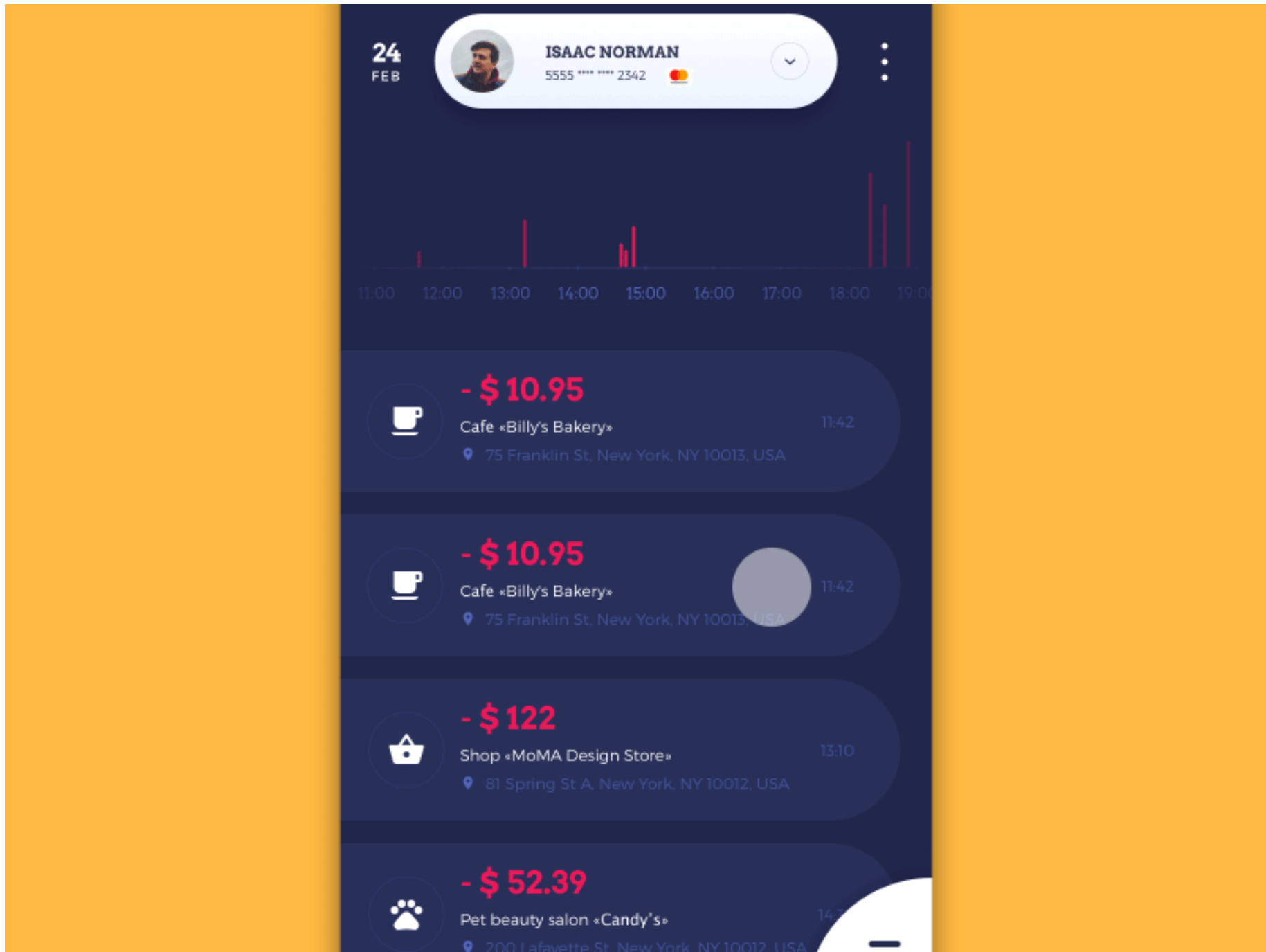


# Accessibility & Micro-interactions

Call to Action



Micro-interactions





# Concept 1 a

## Comfort & Luxury - White

- Clean minimalistic design gives a sense of space and comfort.
- Scalable can accommodate all kinds of Car colours.
- Soothing design with strategical use of Reds to highlight key actions.
- Apt use of Neomorphism where it adds value.



# Concept 1 b

## Comfort & Luxury - Red

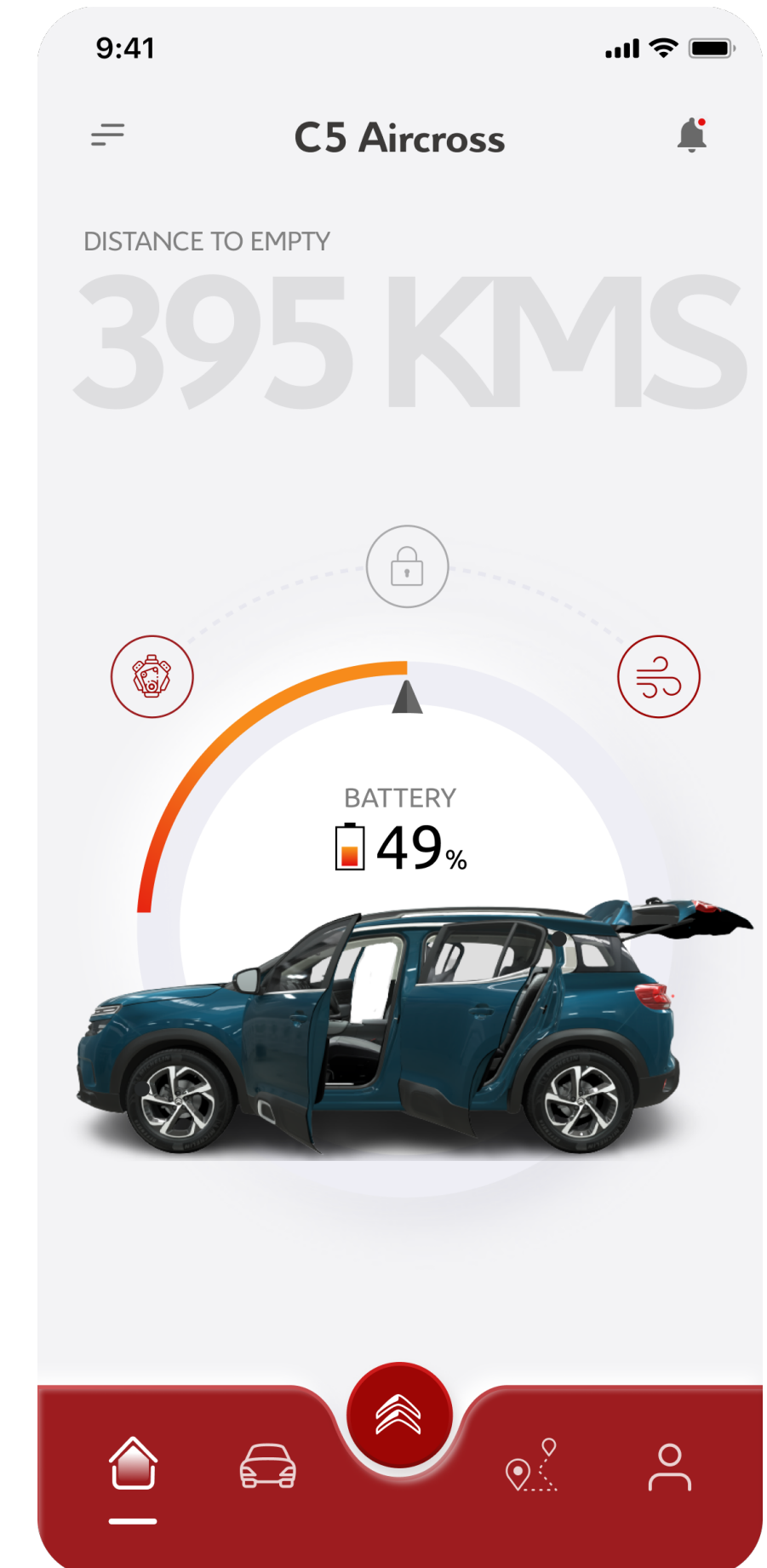
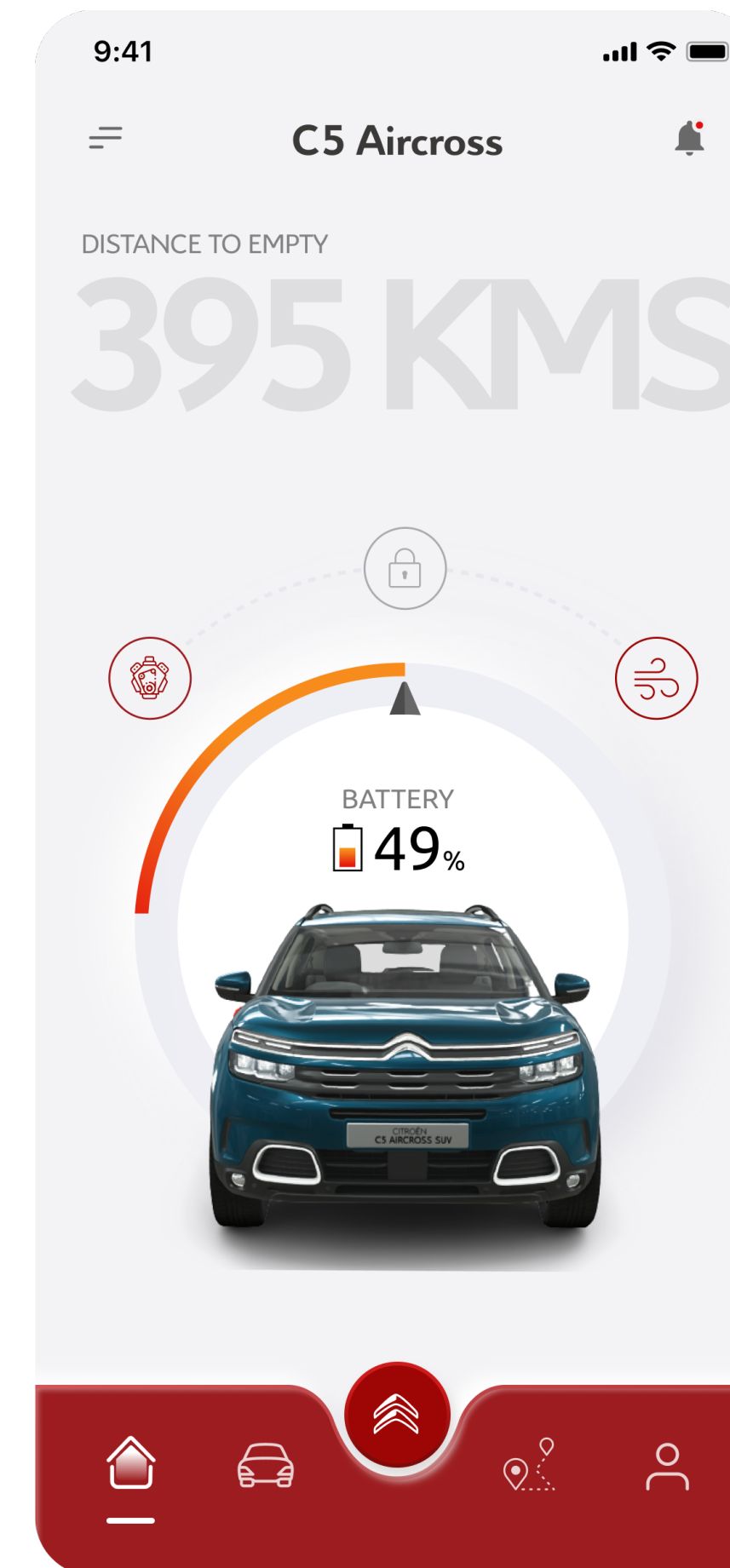
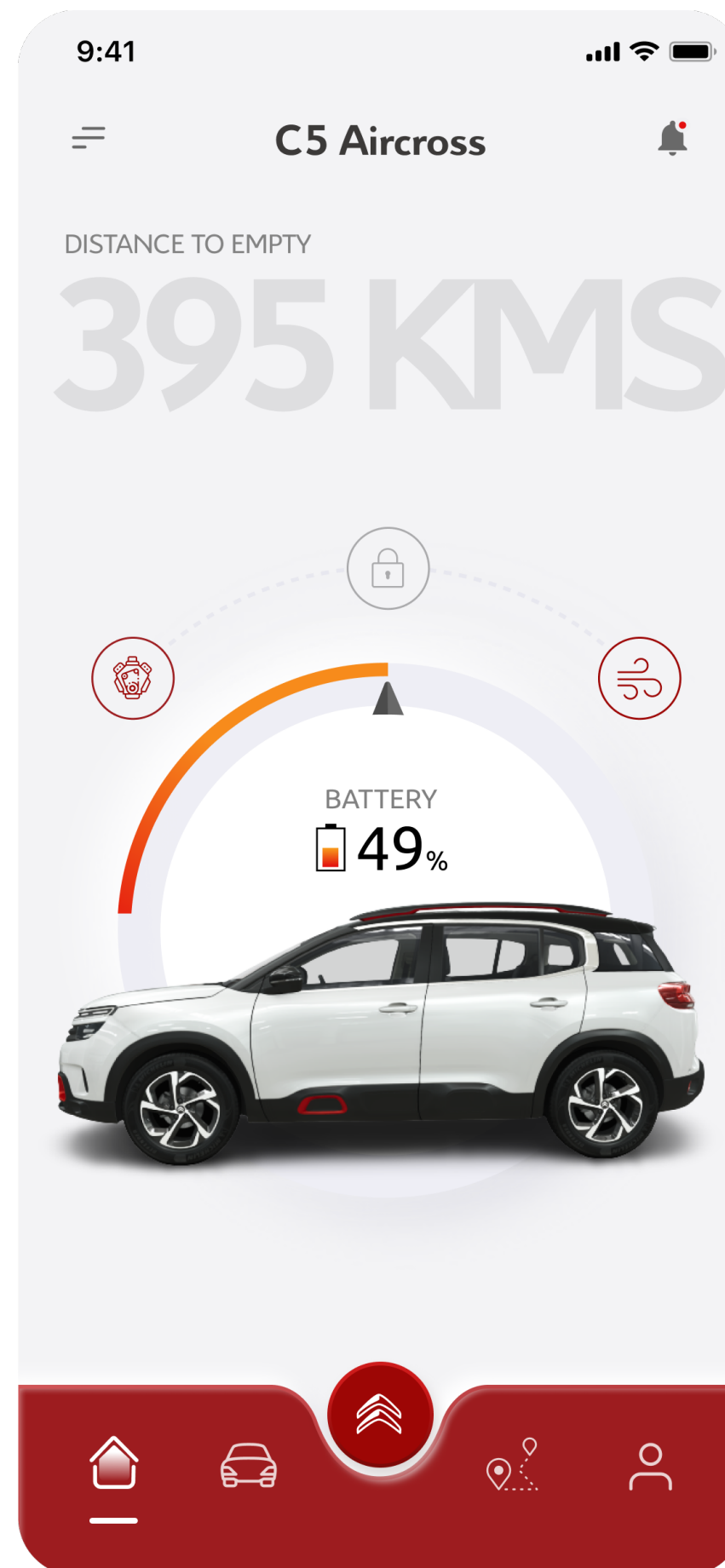
- Clean minimalistic design gives a sense of class and comfort.
- Red gives a rich sporty look which would work very well with younger audience.
- Also adds to good brand recall and looks unique from any other app in the market.
- Apt use of Neomorphism where it adds value.



# Concept 2

### Minimal - White

- Vehicle is the hero user can rotate to view it from multiple angles on the X axis.
- Clear battery & fuel indicators & Other statuses.
- Prominent use of Red for the bottom navigation.
- Scalable can accommodate all kinds of Car colours.

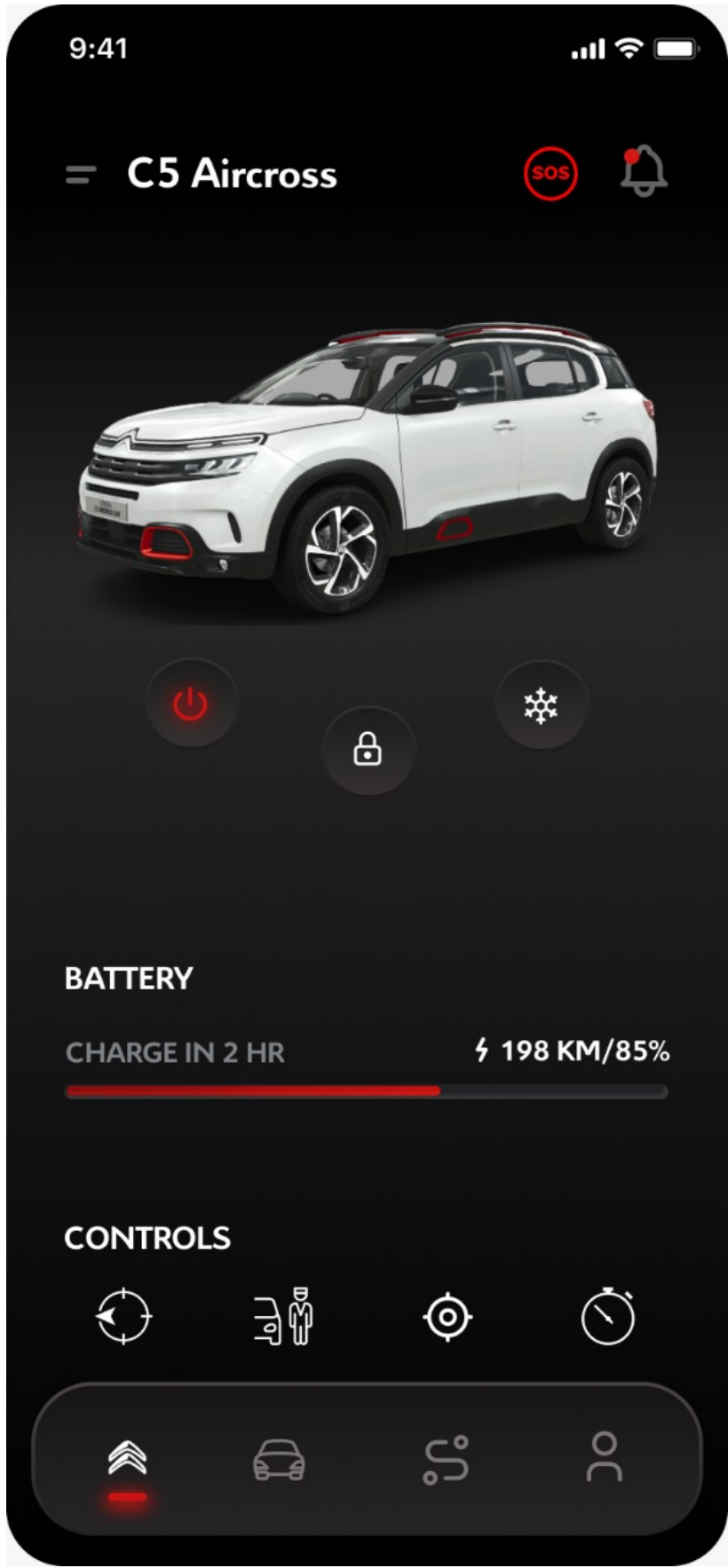
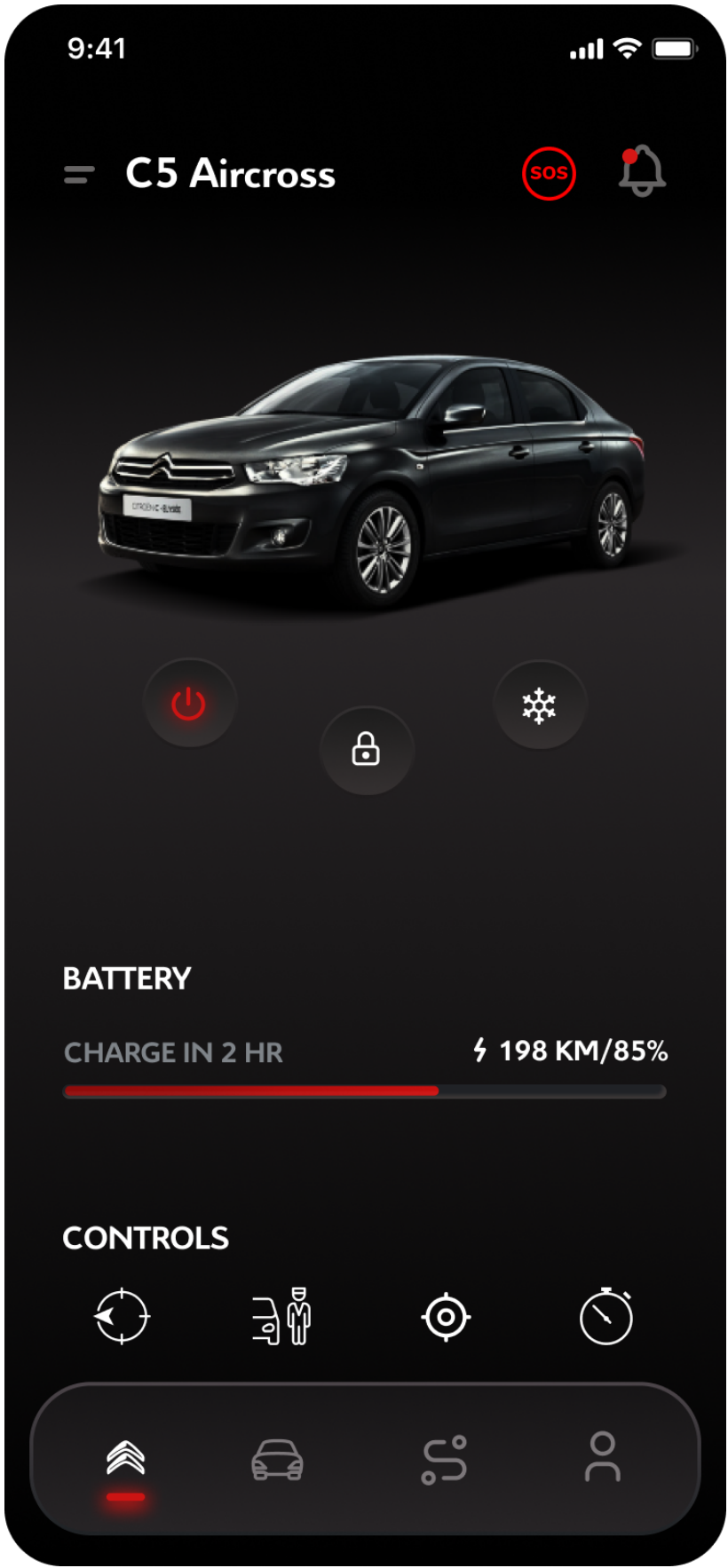
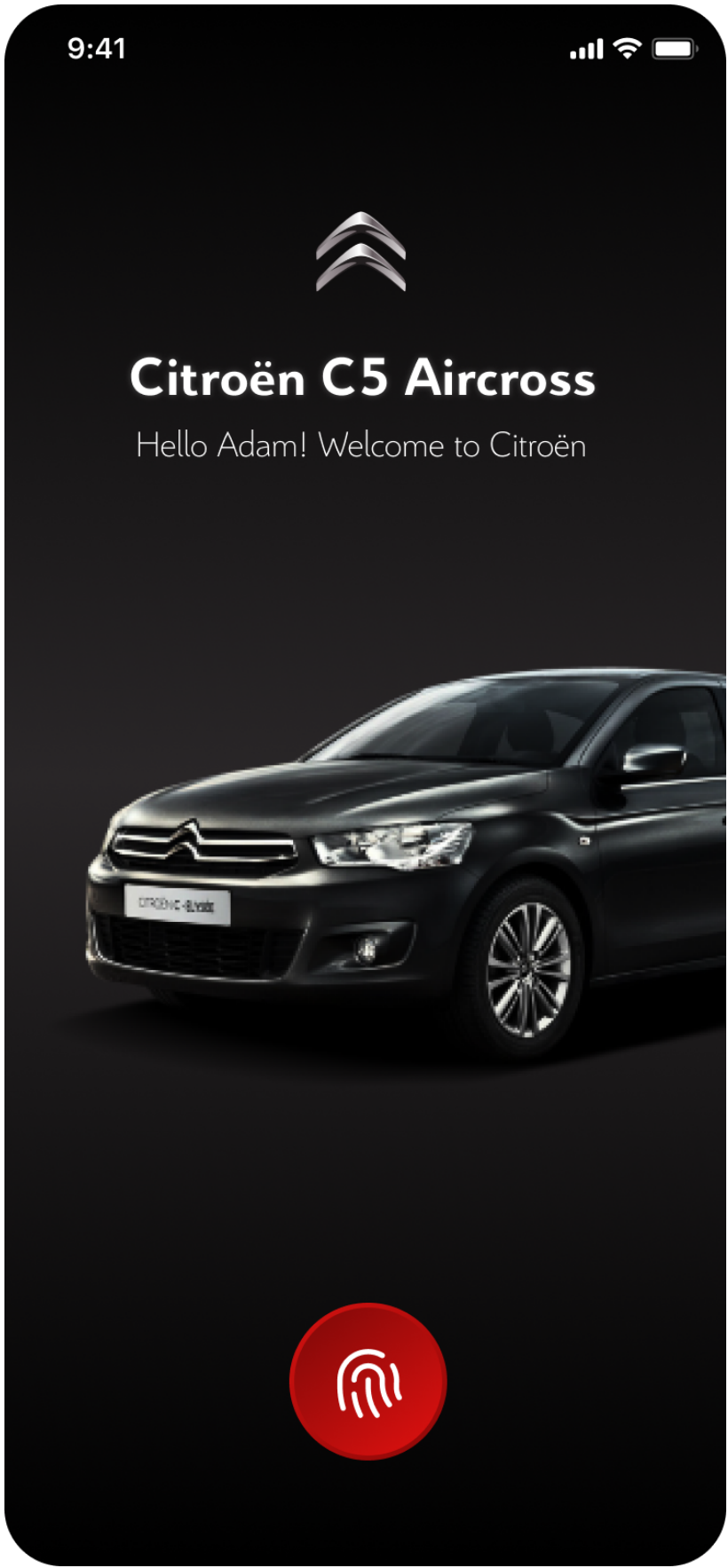




# Concept 3

## Rich & Classy - Dark Theme

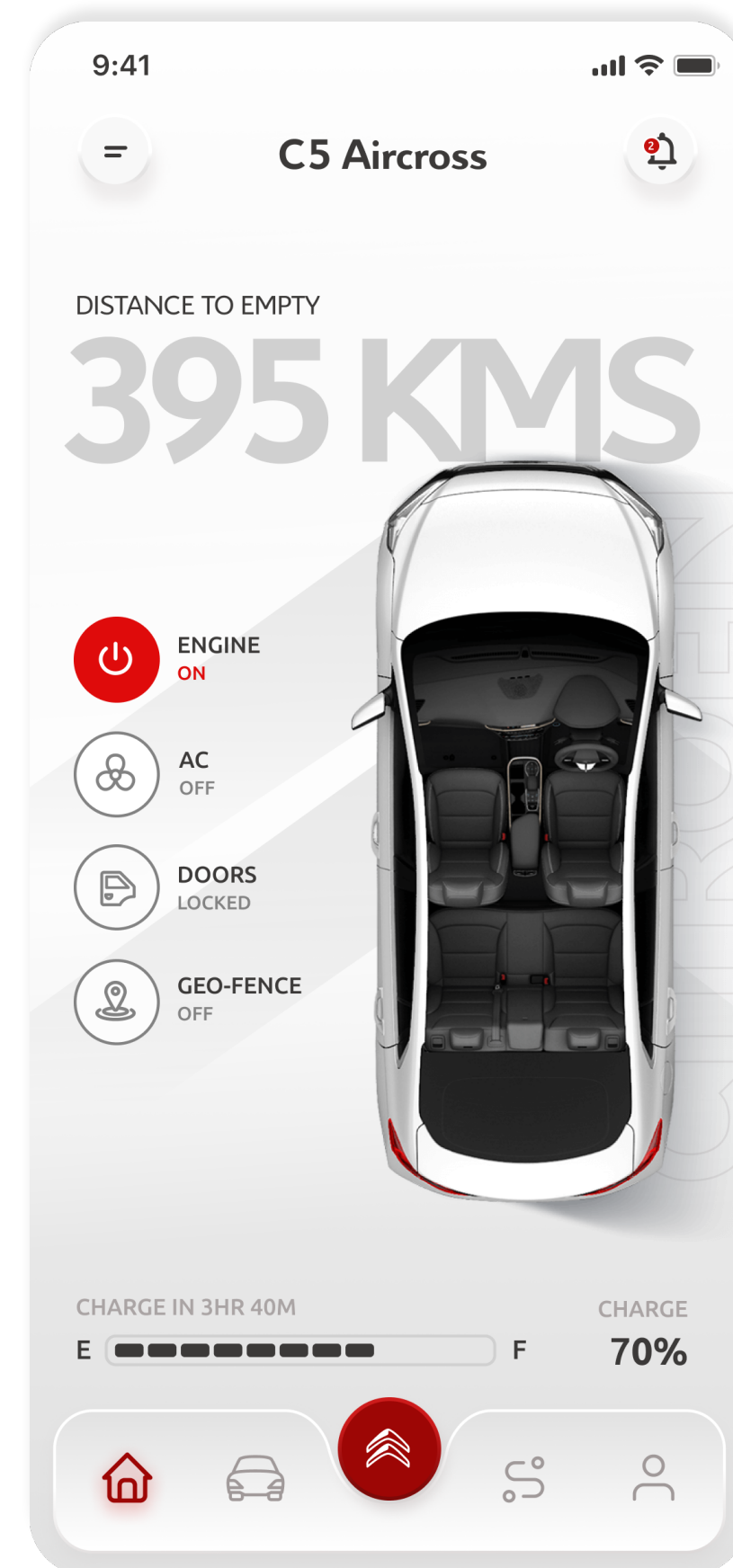
- Clean minimalistic design gives a sense of comfort & class.
- Clear battery & fuel indicators & Other statuses.
- Scalable for other car colours.
- Minimal use of Neumorphism where it adds value.



# Concept 4 a

### Comfort & Luxury with added branding

- Clean minimalistic design gives a sense of comfort & class.
- Clear battery & fuel indicators & Other statuses.
- Scalable for other car colours.
- Minimal use of Neumorphism where it adds value.
- Use of Brand logo in the background adding to the light and shadow play



# Concept 4b

### Comfort & Luxury with added branding - Red

- Clean minimalistic design gives a sense of comfort & class.
- Clear battery & fuel indicators & Other statuses.
- Red gives a rich & sporty look which would work very well with younger audience.
- Also adds to good brand recall & looks unique to any other app in the market
- Minimal use of Neumorphism where it adds value.



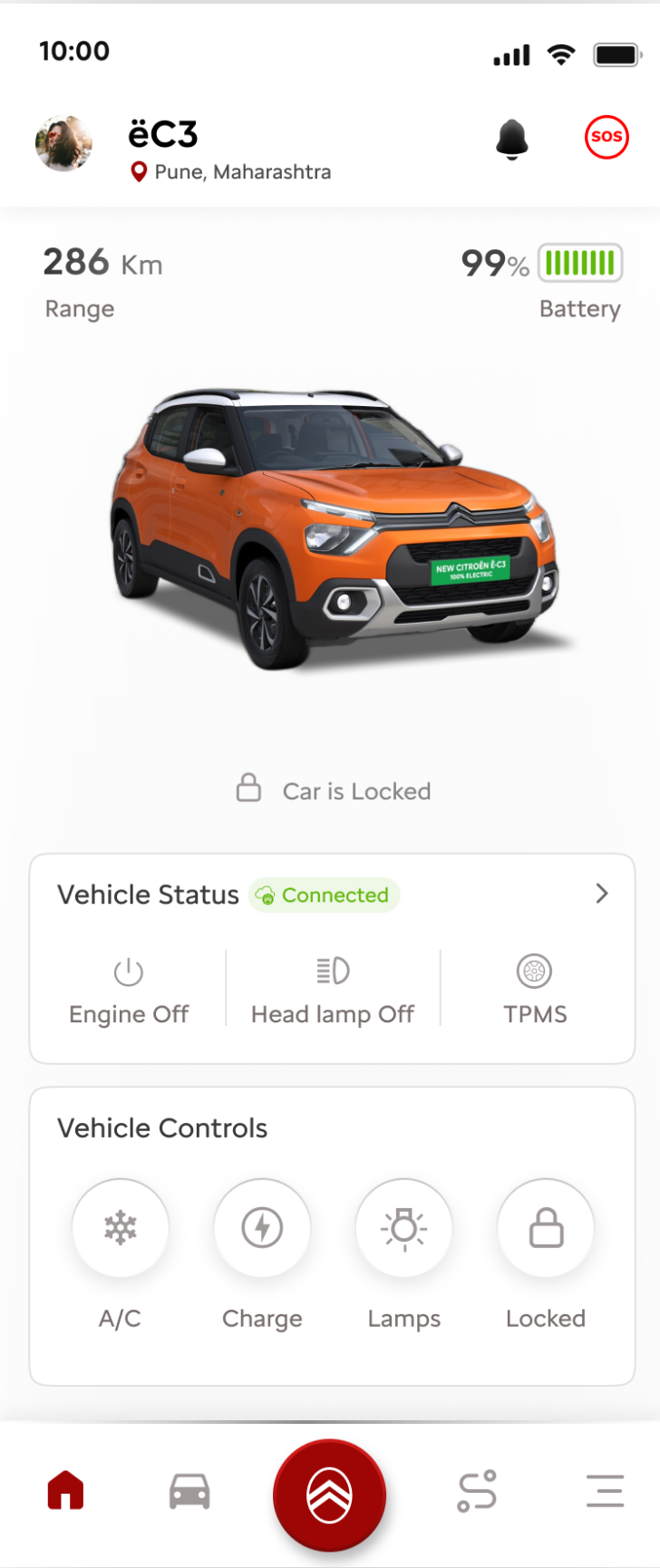


**Final Designs**

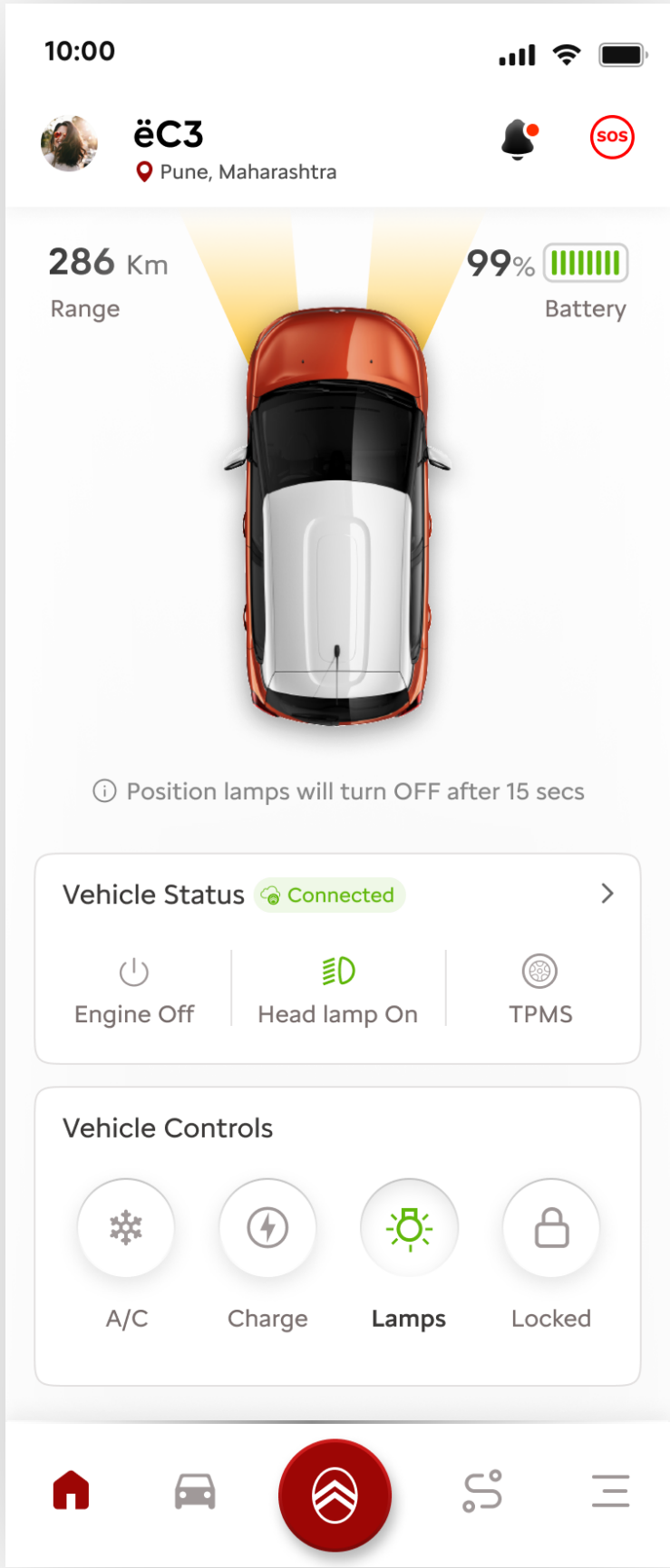


FINAL DESIGNS

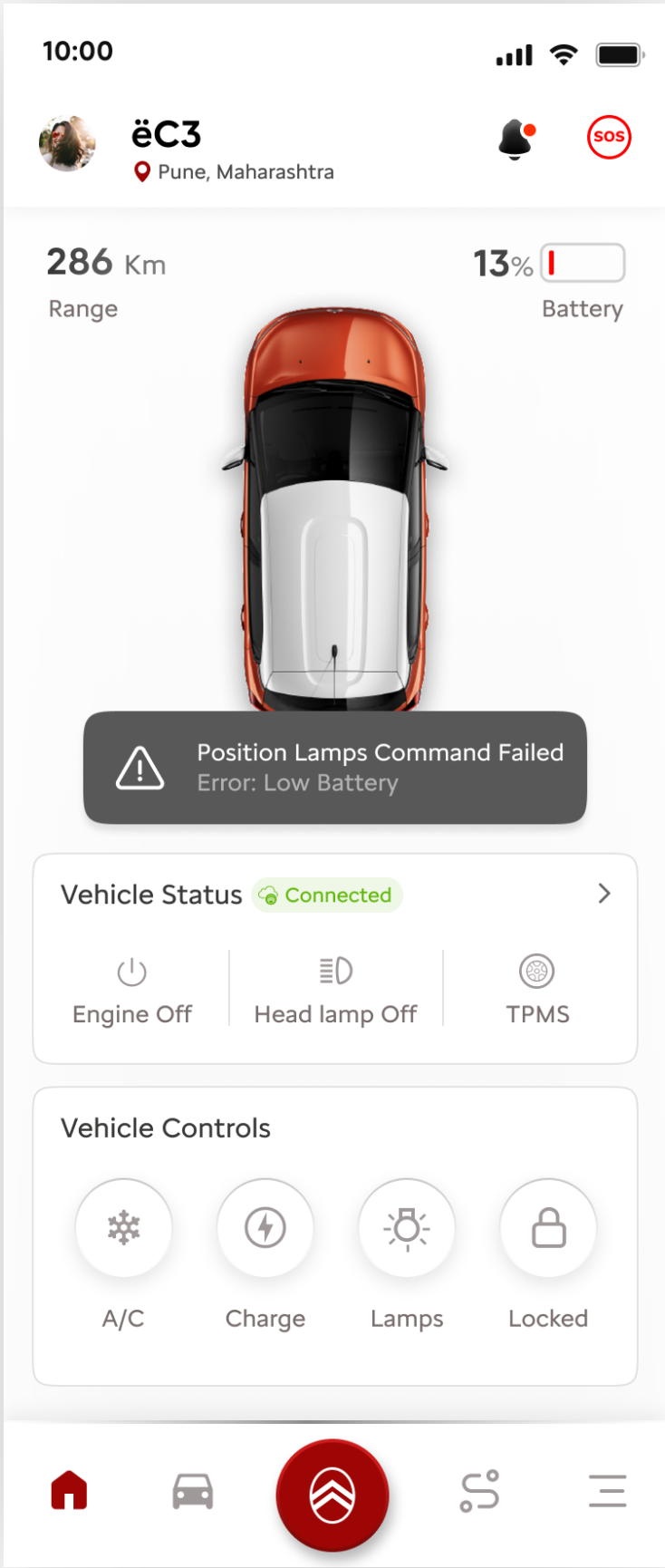
Dashboard



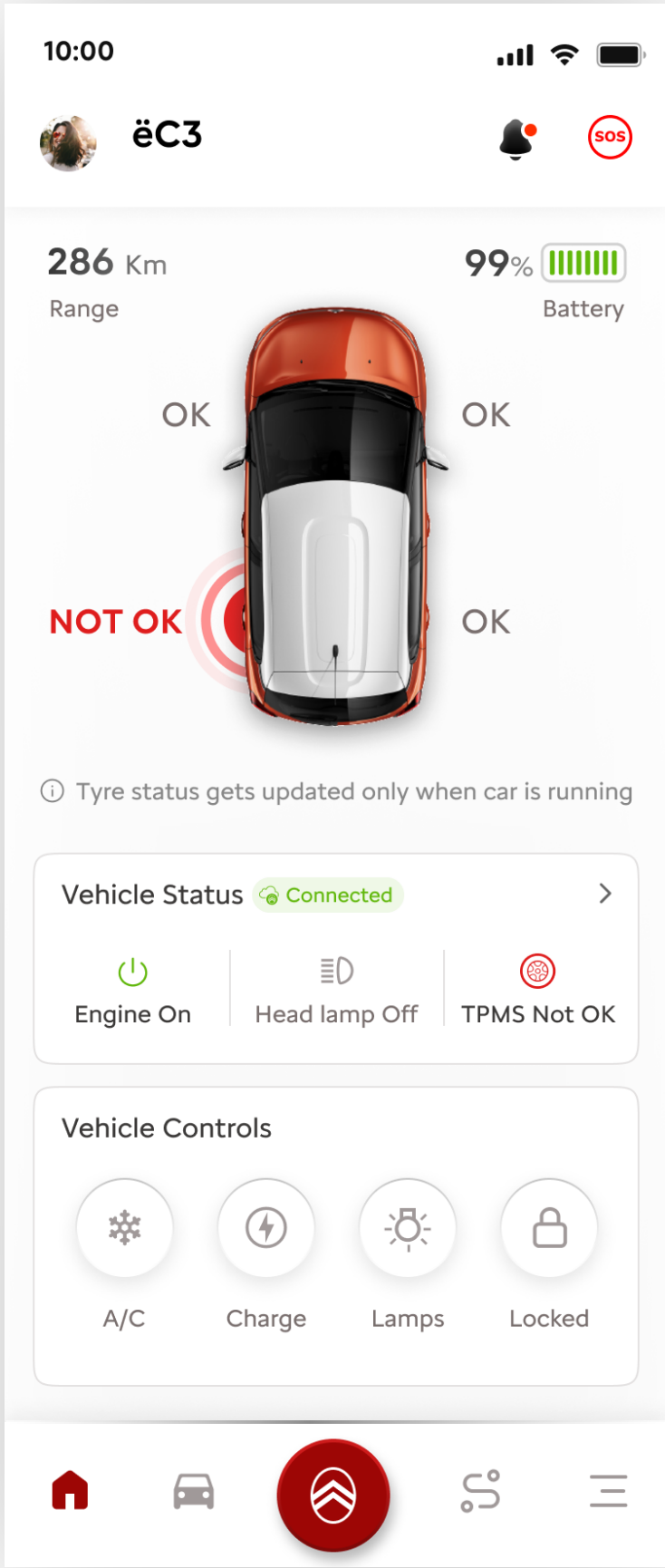
Home Screen with no commands ON



Position Lamps ON



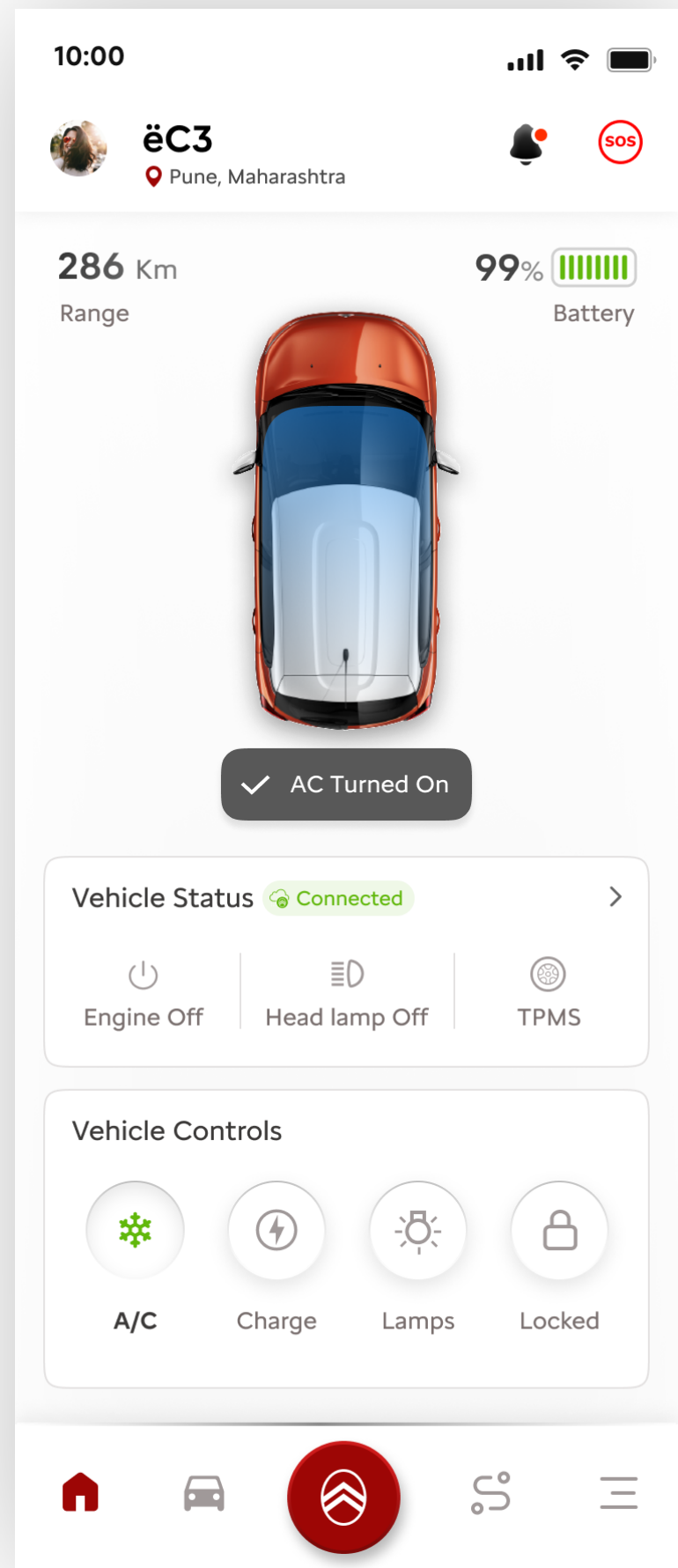
Position Lamps failure scenario



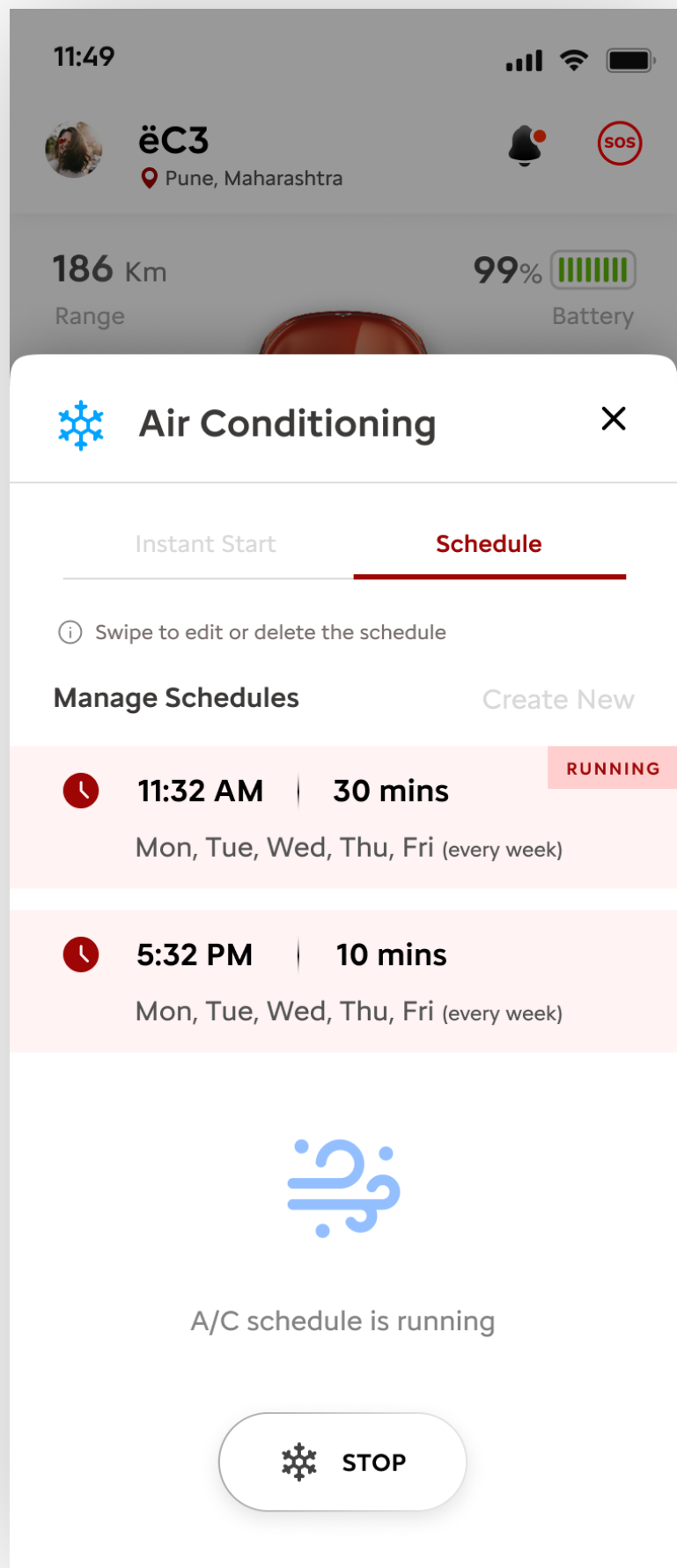
Tyres not OK

FINAL DESIGNS

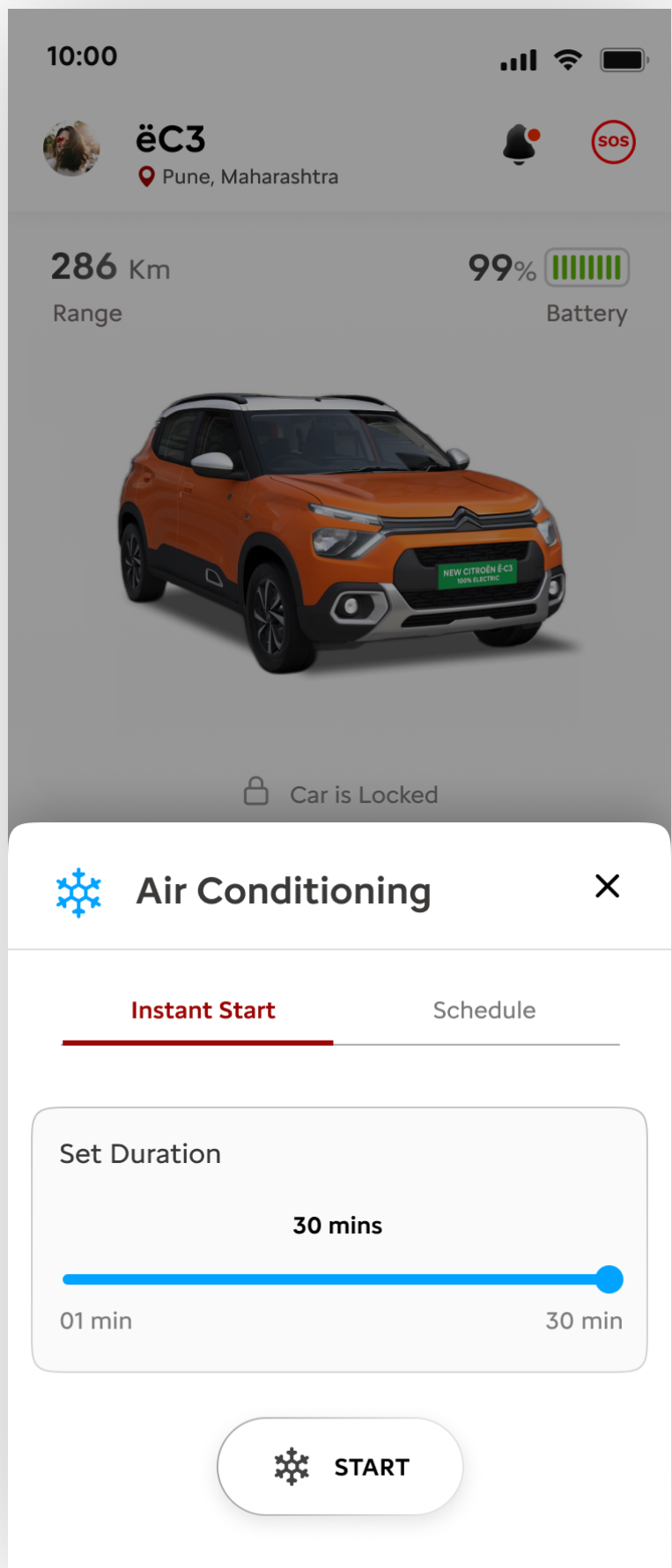
Air Conditioning



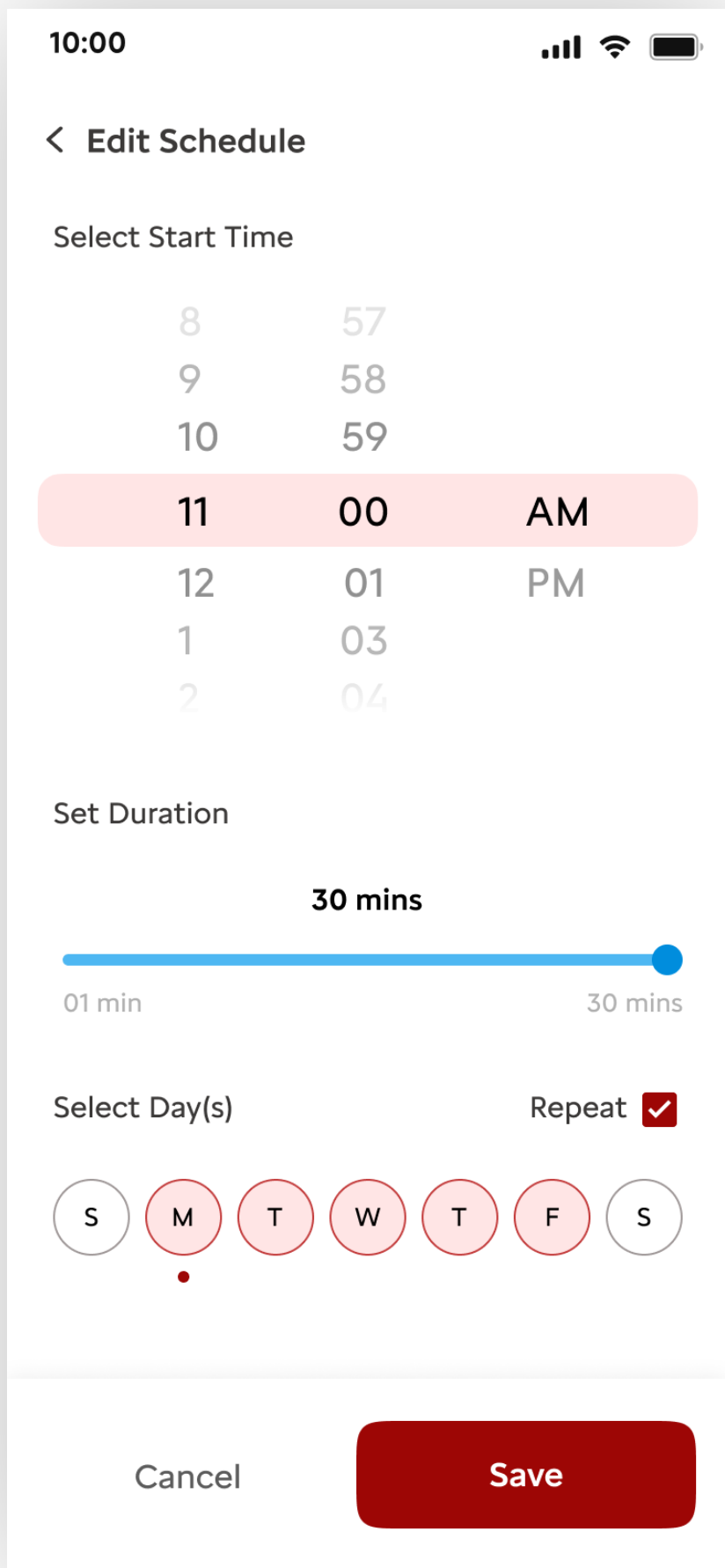
A/C turned ON



A/C Schedule running



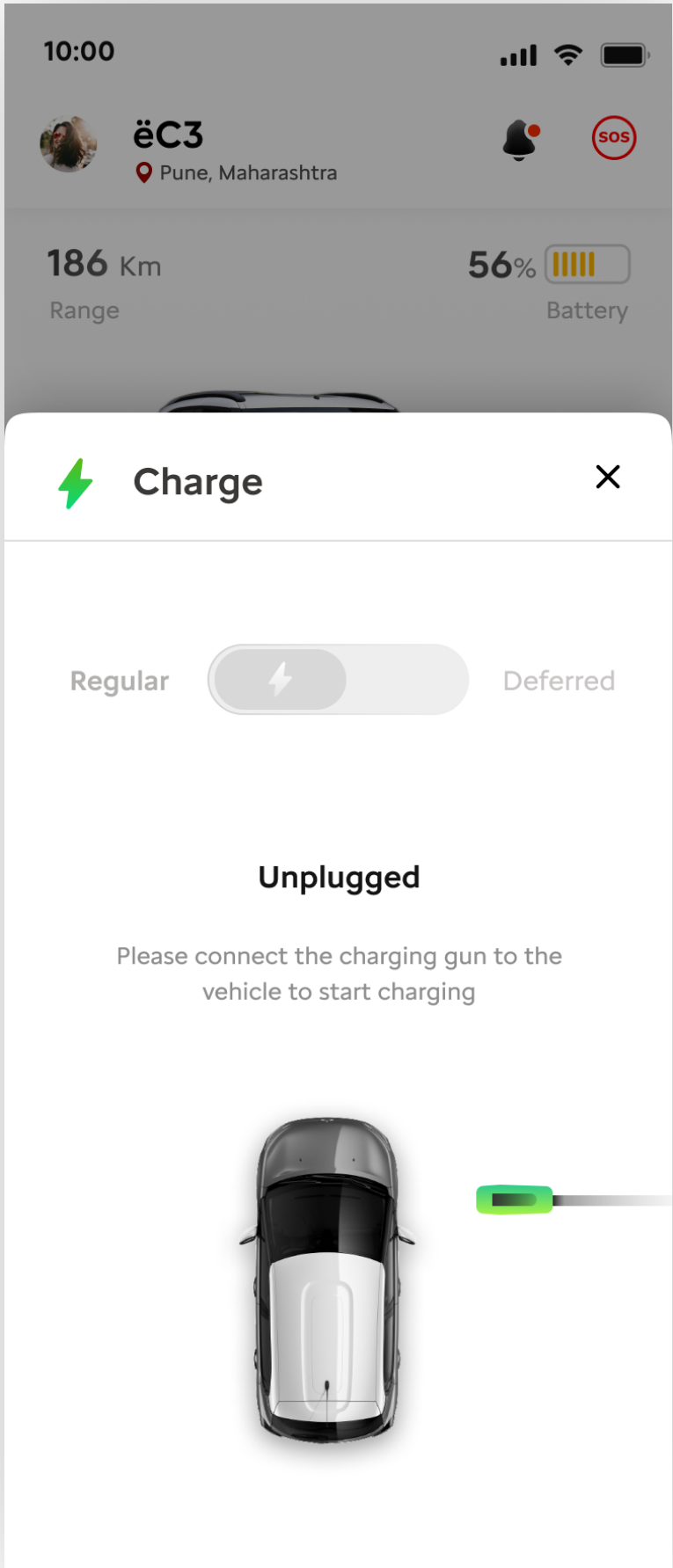
A/C Instant Start



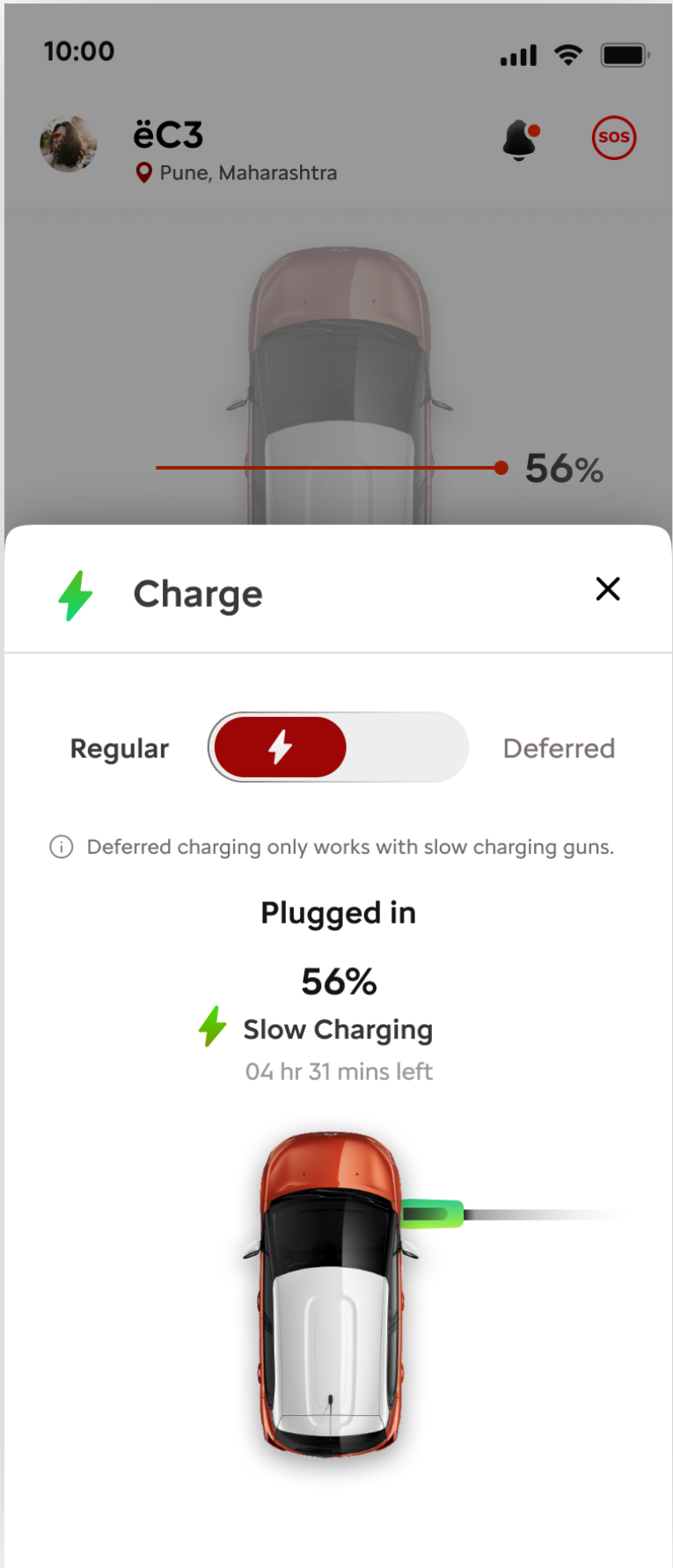
A/C Edit Schedule

FINAL DESIGNS

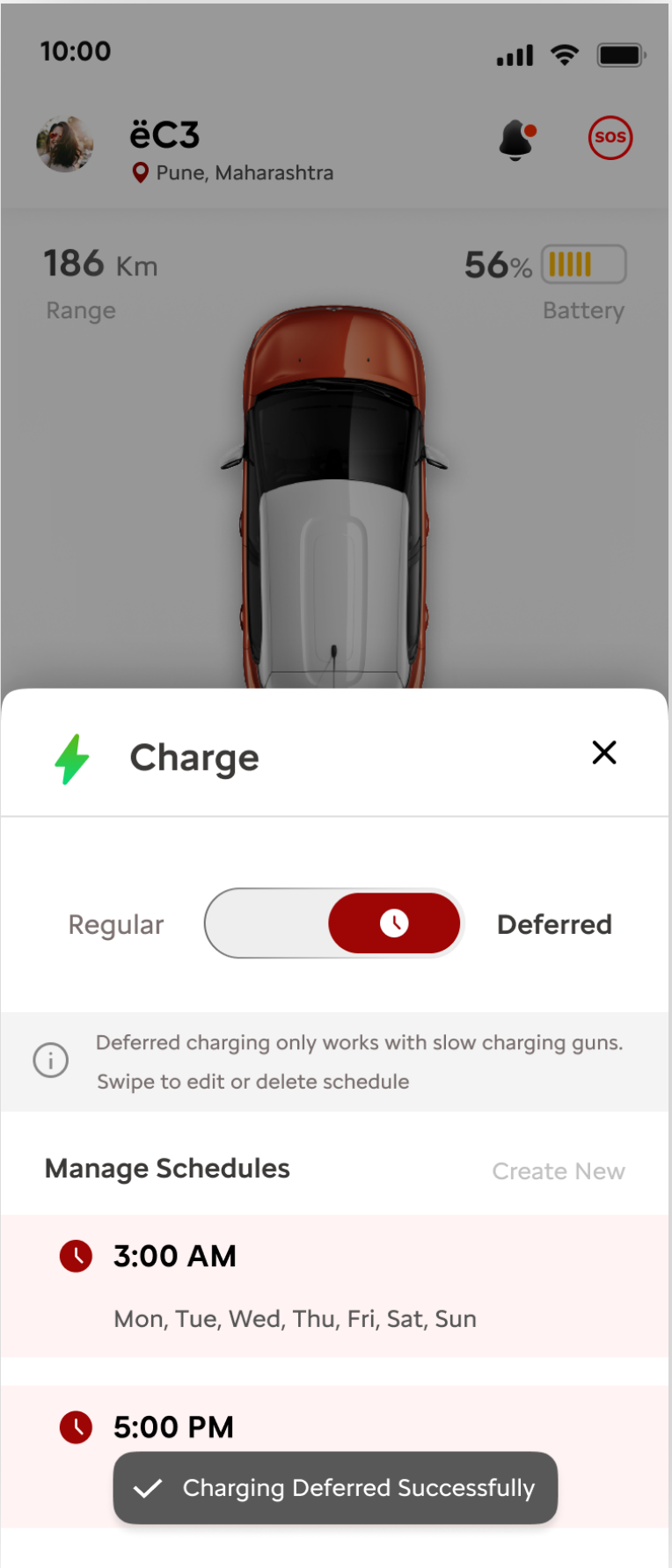
Charging



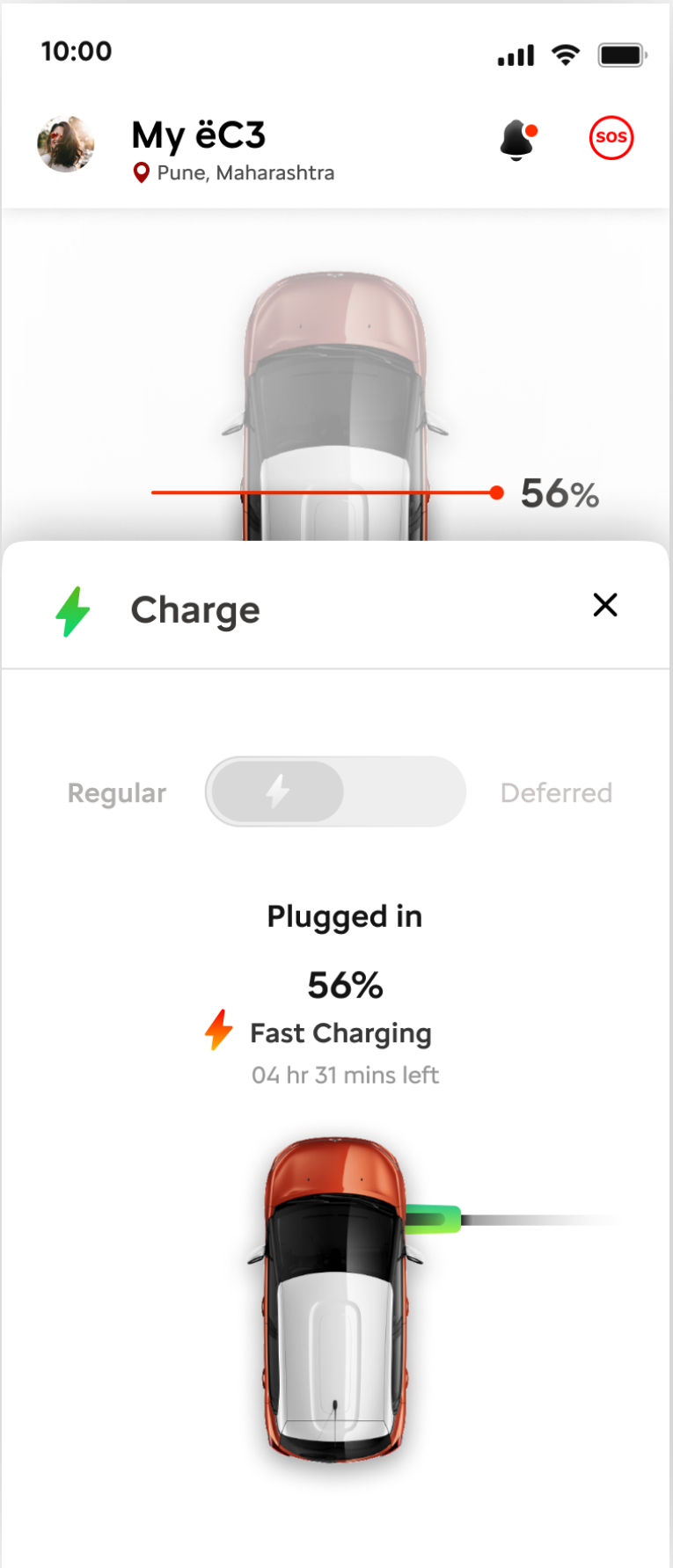
Charger is Unplugged



Regular Charging running



Charging Deferred

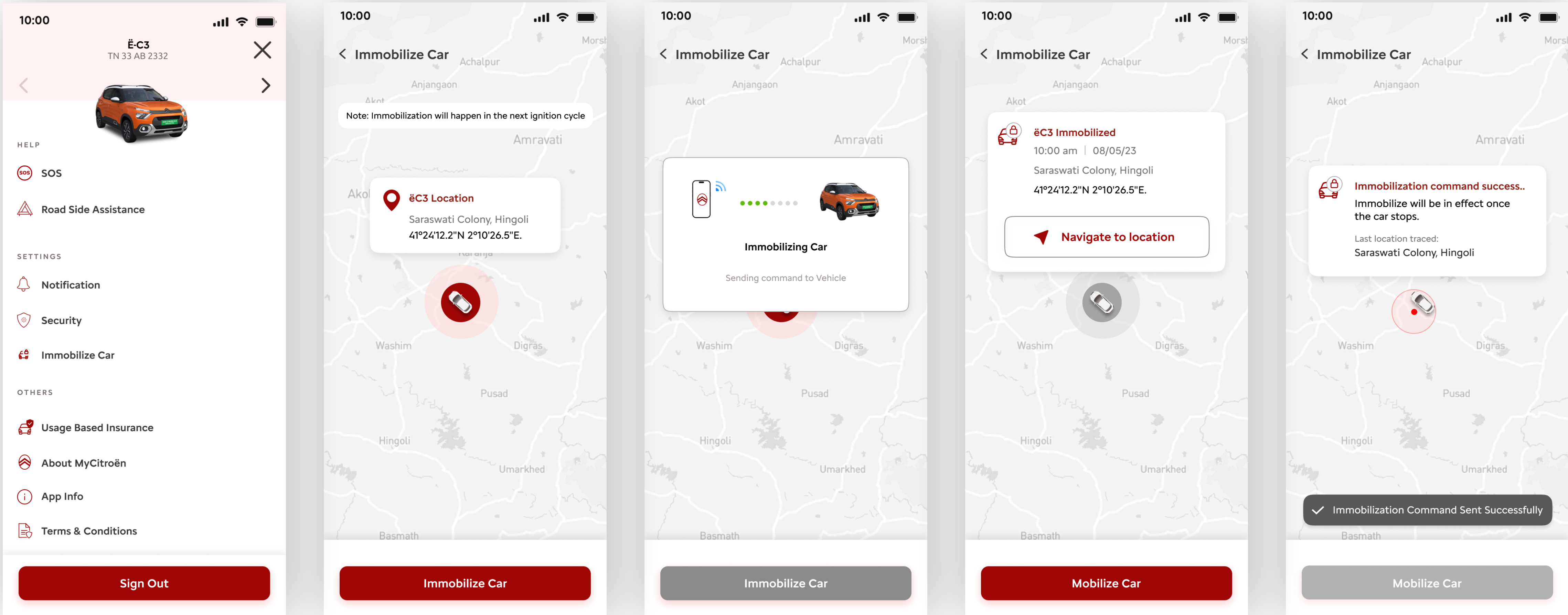


Fast Charging ON



FINAL DESIGNS

Remote Immobilization



Remote Immobilisation

Current Car Location shown

Command initiation

Immobilization Success

Command success, car in motion

# Outcome/ UX Impact

## Improved Affordances

Users can differentiate between a button and view-only status

## Less time required to finish task

Users can perform remote actions with one touch

## Easy decision making

Categorised key actions for users to take decision in less time

## Contextual feedback

Users get clear and timely feedback when they perform actions

## Efficient Information Display

Contextually placed information to help users find things quickly





***Thank you!***