

Smart Scene

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1 General Information

1.1 Background

Smart Scene mode is used in different scenes, and it feels very smart to users. For example, as long as the copilot passenger sits in the car, the guest mode is implicitly activated. And the split screen mode is automatically turned on, without requiring the user to actively trigger. And privacy protection will also be turned on automatically in this guest mode without requiring the user to take the initiative to start. In privacy protection, the user's phone details, navigation search history, and information details will be hidden. The system can open non-driving related functions to the passengers.

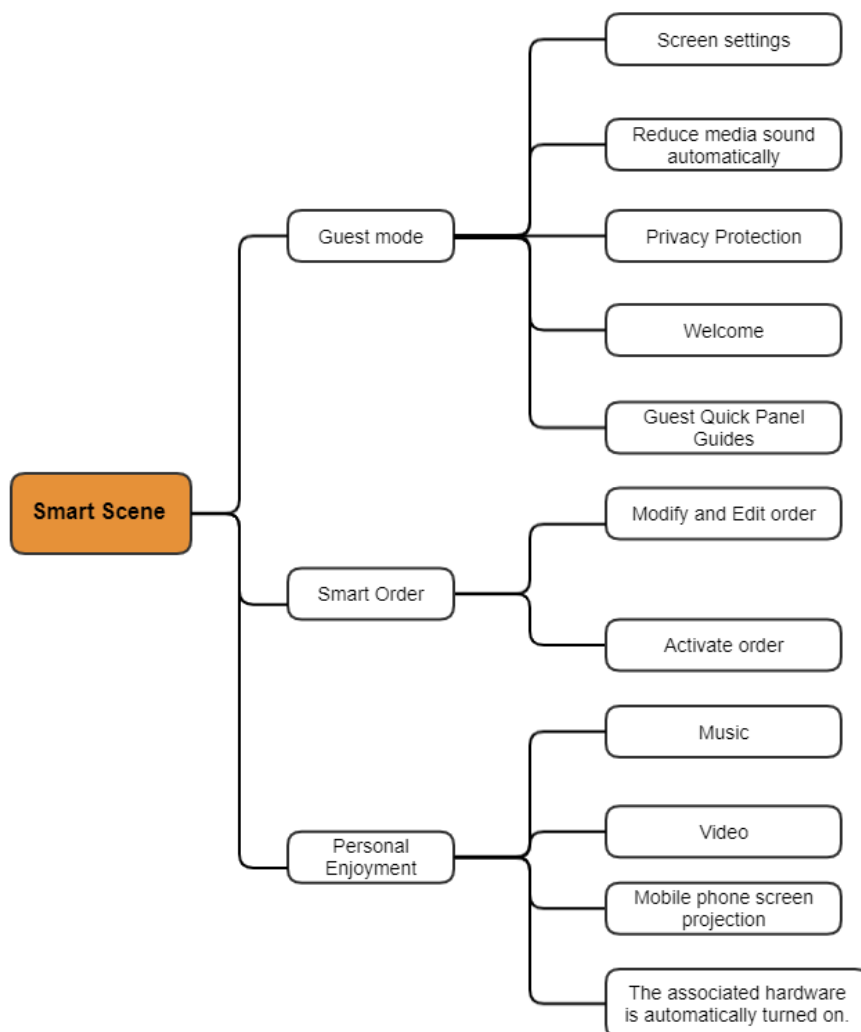
1.2 Scope of the document

This requirement document serves as a guide to software team what will be developed for Smart Scene mode. The requirement is be used for the HMI team to design the whole User Interface. In particular, all User Interface Prototype in Chapter 3 is just used to describe requirements more clearly, HMI team does not need to follow this, just for reference. This document is also an important reference document for test team, they will design the test case according the requirement description, the description covers the correctness and performance for each function.

2 Software Requirement Overview

2.1 Function overview

2.2 Function Structure



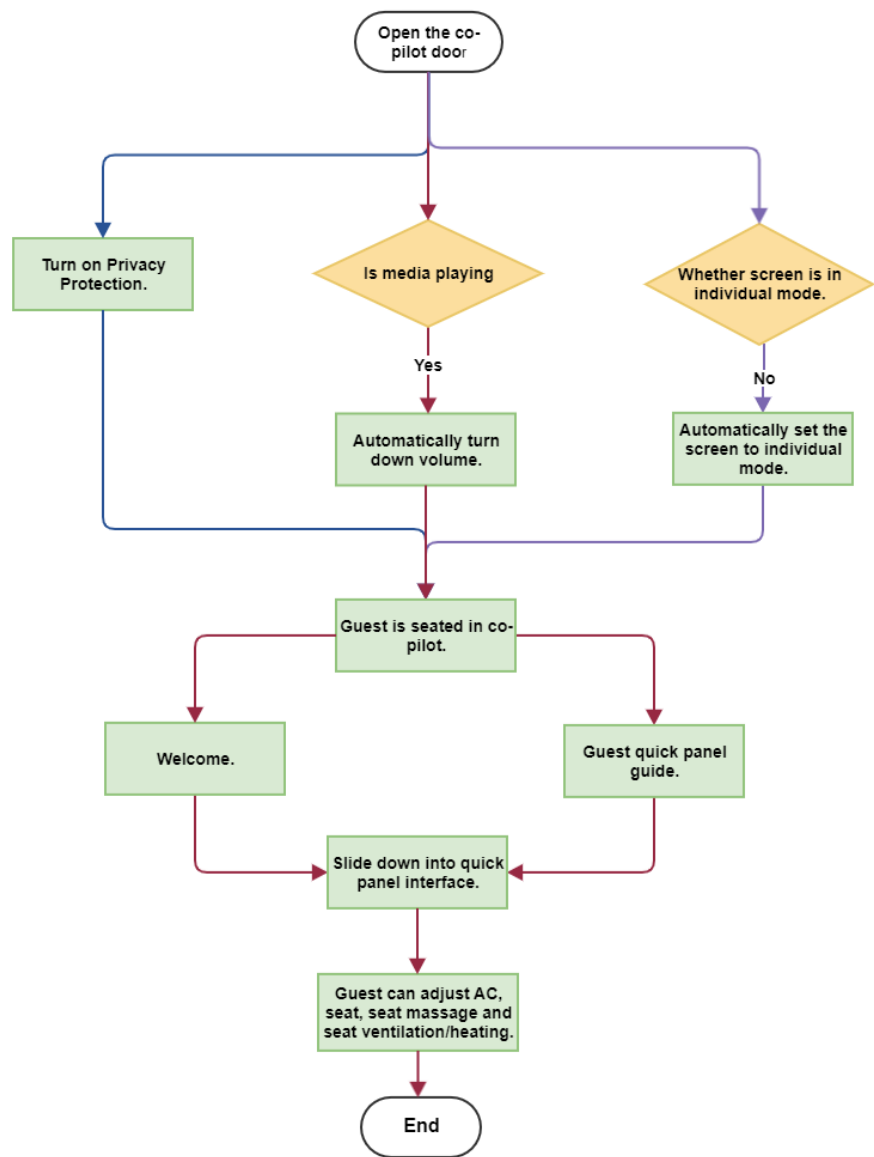
2.3 Detail function

All functions list below.

| Module | Function | Sub-Function | Triggers | Function Description | Priority | Feasibility | comment |
|--------------------|----------------------------------|--------------------------|---------------------------------------|--|----------|--|--|
| Guest Mode | Screen setting | | The guest opens the passenger's door. | Automatically set the screen to individual mode. (default) | | Y | in house-team implementation |
| | Automatically reduce media sound | volume | The guest opens the passenger's door. | Media is playing(Himalaya,FM,music and video): Volume automatically turned down(30%/50% (default)/70%) | | Y | in house-team implementation |
| | | | | No changes when there is on media playing | | Y | in house-team implementation |
| | Privacy Protection | Phone | The guest opens the passenger's door. | Phone minimization display;(No name or phone number is displayed) Weakening the call tone: adjust the volume to one of three: 20%/35%(default)/50% Notification: All information about the phone on the IVI is prohibited, especially the notification on IVI. | | TBD The privacy settings are set as a system setting, and the guest mode simply calls a system setting. | need Feature Owner to confirm with Desay |
| | | | | IVI avoids displaying the phone application interface: case 1: When it is on the launcher page, no change is made; case 2: When in the page opened by phone function, return to the launcher interface. | | | need Feature Owner to confirm with Desay |
| | | | | | | | |
| | | Navigation search record | The guest opens the passenger's door. | Hide search history | | | need Feature Owner to confirm with Baidu |
| | | | | Map does not show POI | | | need Feature Owner to confirm with Baidu |
| | | IVI notification | The guest opens the passenger's door. | privacy protection is on | | | |
| | Welcome | | The guest sits down. | The welcome message displayed only in text is displayed using a pop-up. This pop-up disappears after being displayed for 5 seconds. | | Y | in house-team implementation |
| | Guest quick Panel guides | | The guest operates the screen. | The guest mode calls the quick panel, and there is a guide interface to inform the user how to use it. | | Quick panel is in system settings. | |
| | Exit guest mode | | The guest leaves. | 1.The screen is restored to the mode before opening guest mode. 2. The phone notification returns to normal. 3. The search record of the map is restored, and the POI is show on the map. 4. IVI notification: Privacy protection is off. | | | |
| | | | | | | | |
| Smart Order | Modify and Edit order | | | Modify and Edit order | | Y | |
| | Activate order | | | Activate order | | Y | |
| Personal Enjoyment | | | | 1.User opens immersive mode via Dashcard or VPA. The system automatically enters split screen mode. 2.There are three entrances on the interface: music, video and mobile phone screen projection. 3.The associated startup hardware: the ambient light, seat massage and the digital scent turn on automatically. | | | |

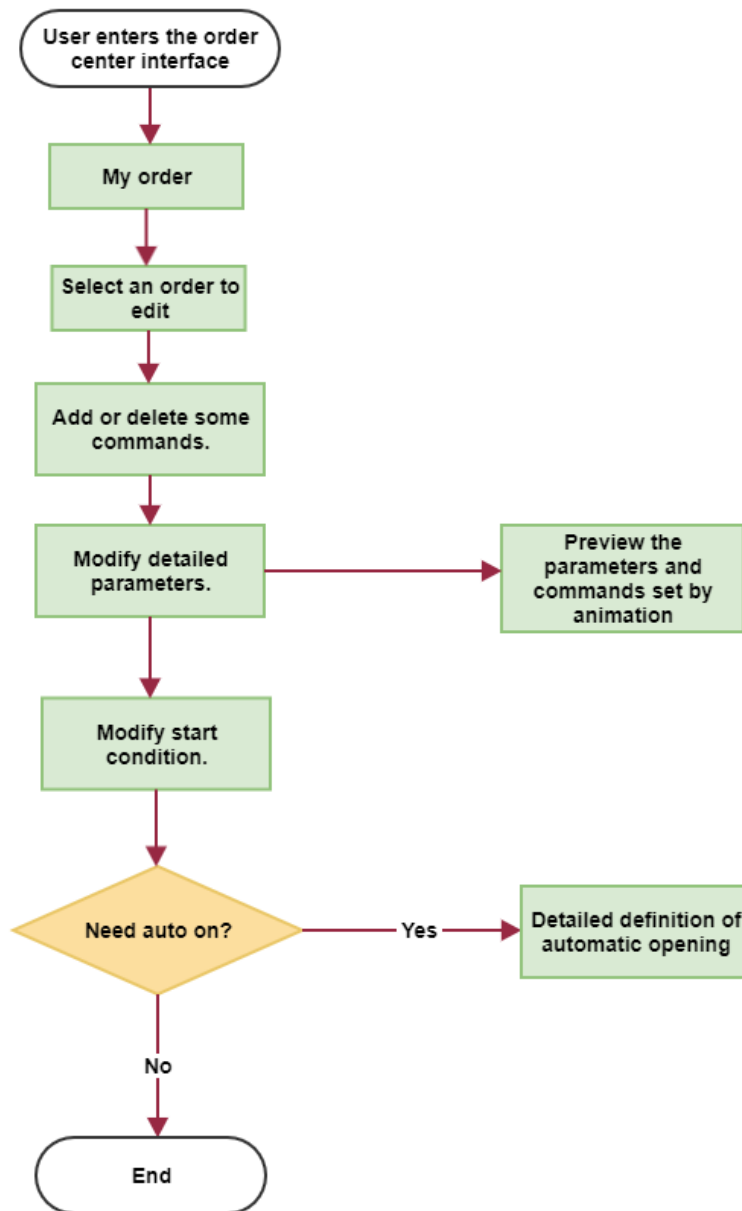
2.4 Function Flow Chart

2.4.1 Guest Mode Flow Chart

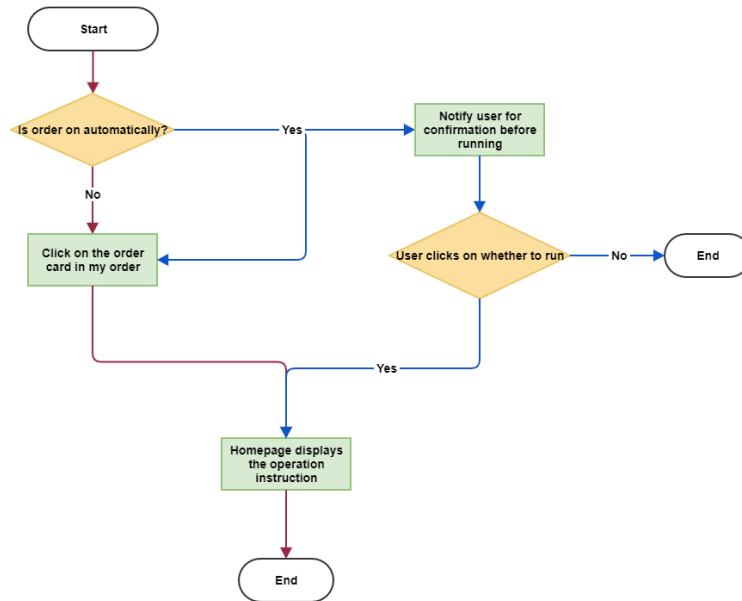


2.4.2 Smart Order Flow Chart

2.4.2.1 Modify and Edit order



2.4.2.2 Activate order



3 User Case

3.1 Guest Mode

The guest mode is automatically triggered as soon as the passenger opens the co-pilot door, or as soon as he sits in the co-pilot position. There is no need for the driver to activate this guest mode.

When guest mode starts, the screen is automatically set to individual mode, and media volume is automatically reduced, and privacy protection is automatically.

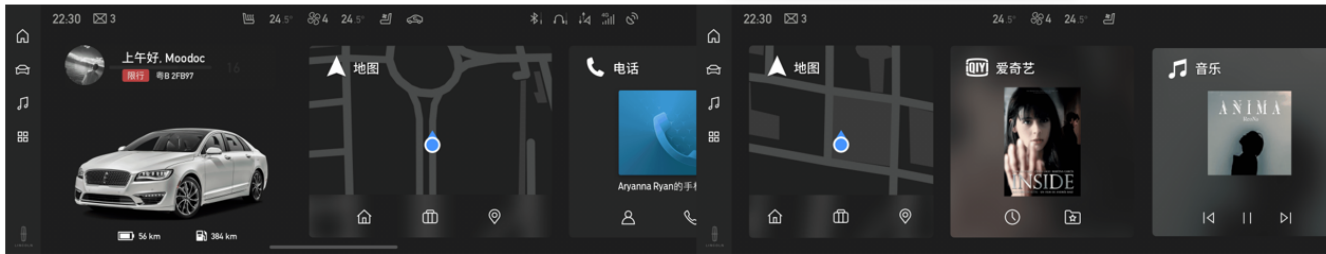
When guest is seated in co-pilot, there is a welcome message pop-up, and guest quick panel guide.

| Use Case ID | Guest Mode |
|-------------------|--|
| Use Case | Guest mode is triggered implicitly. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. |
| Trigger | Passenger opens the co-driver door. |
| Expected Behavior | Guest mode is triggered implicitly. |
| Post Conditions | N/A |
| Exceptions | N/A |

3.1.1 Screen setting

| Use Case ID | Screen Setting |
|-------------------|---|
| Use Case | Screen is automatically set to individual mode in guest mode. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. 3.Guest mode is on. |
| Trigger | Automatically |
| Expected Behavior | |

| | |
|-----------------|-----|
| Post Conditions | N/A |
| Exceptions | N/A |



3.1.2 Reduce media volume automatically

| | |
|-------------------|--|
| Use Case ID | Reduce media volume automatically |
| Use Case | Media volume is automatically reduced in guest mode. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. 3.Guest mode is on. |
| Trigger | Automatically |
| Expected Behavior | 1.Media volume turn down 50% automatically when media playback.(default) 2.No changes when no media is playing. |
| Post Conditions | N/A |
| Exceptions | N/A |

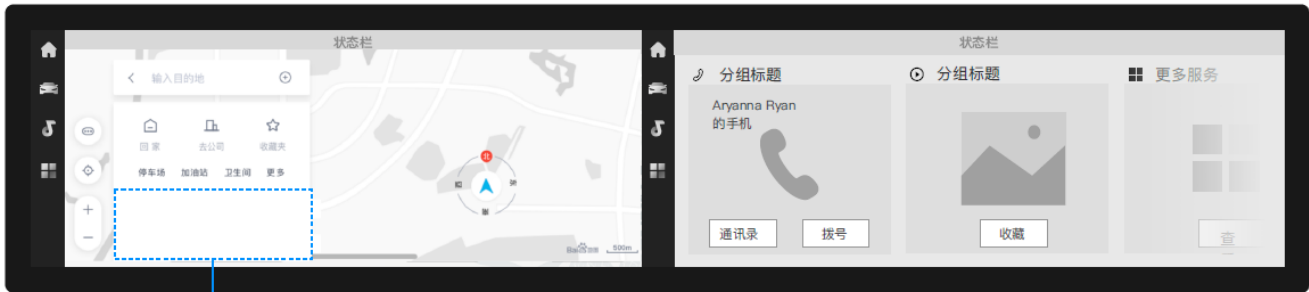
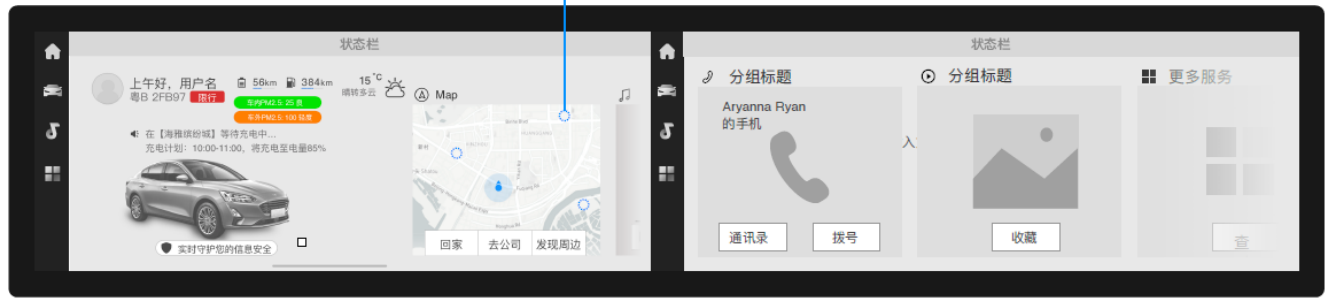
3.1.3 Open privacy protection automatically

| | |
|-------------------|---|
| Use Case ID | Open privacy protection automatically. |
| Use Case | Privacy protection is automatically turned on in guest mode. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. 3.Guest mode is on. |
| Trigger | Automatically |
| Expected Behavior | 1.Phone minimization display and weakening the call tone; 2.Navigation search records are hidden and map does not show POI. 3.IVI notification. |
| Post Conditions | N/A |
| Exceptions | N/A |

隐藏内容说明

1. 客人模式开启后，将地图中收藏的地点，公司和家的icon隐去。
2. 如果客人开门后，驾驶员正在打电话过程中，通话界面直接退出到主界面。

客人打开车门后，进入分屏模式。隐私保护开启，将驾驶员相关隐私信息隐藏

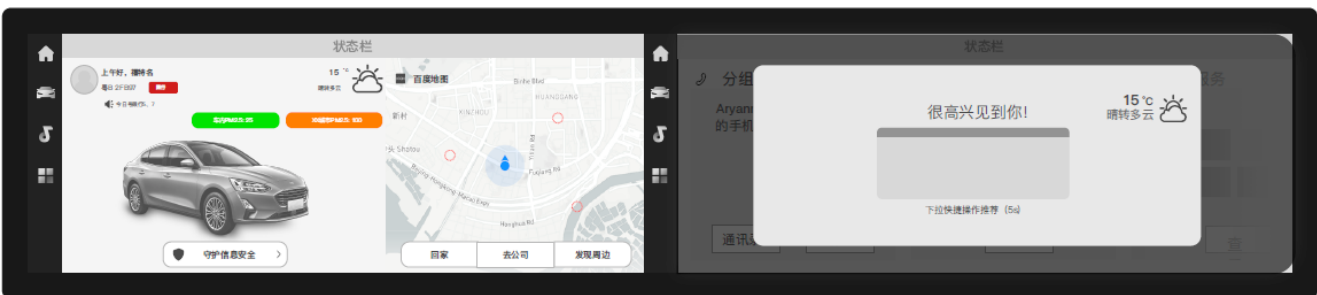


隐私内容说明

1. 进入导航后，历史目的地的记录都被隐去。

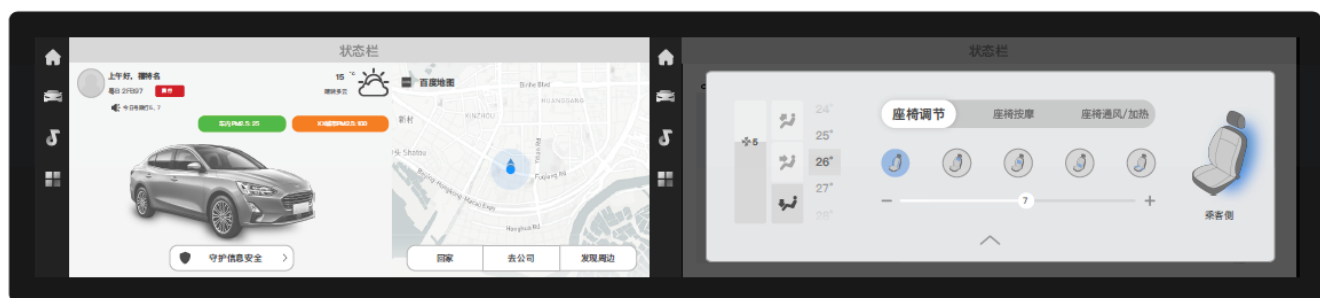
3.1.4 Welcome message display

| Use Case ID | Welcome message display |
|-------------------|---|
| Use Case | A pop-up displays a welcome message when the guest is seated in co-pilot. |
| Pre-Conditions | <ol style="list-style-type: none"> 1.IVI is running. 2.Network is available. 3.Guest mode is on. 4.Guest is seated in co-pilot. |
| Trigger | Automatically |
| Expected Behavior | <p>The welcome message displayed only in text is displayed using a pop-up.</p> <p>This pop-up disappears after being displayed for 5 seconds.</p> |
| Post Conditions | N/A |
| Exceptions | N/A |



3.1.5 Guest quick panel guide

| Use Case ID | Guest quick panel guide |
|-------------------|--|
| Use Case | Guest wants to adjust the seats and air conditioning. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. 3.Guest mode is on. 4.Guest is seated in co-pilot. |
| Trigger | Automatically |
| Expected Behavior | The guest mode calls the quick panel, and there is a guide interface to inform the user how to use it. |
| Post Conditions | N/A |
| Exceptions | N/A |
| Notes | Quick panel is a system setting. |



3.1.6 Exit Guest mode

| Use Case ID | Guest mode setting page |
|-------------------|--|
| Use Case | User want to exit guest mode. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. |
| Trigger | 1. The guest leaves.(The passenger seat is empty, and the door opens and closes.) |
| Expected Behavior | 1.The screen is restored to the mode before opening guest mode. 2. The phone notification returns to normal. 3. The search record of the map is restored, and the POI is show on the map. 4. IVI notification: Privacy protection is off. |
| Post Conditions | N/A |
| Exceptions | N/A |

3.1.7 Guest mode setting page

| Use Case ID | Guest mode setting page |
|----------------|---|
| Use Case | User want to adjust the default parameters of the guest mode. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. |

| | |
|-------------------|---|
| Trigger | 1. User select the vehicle settings. 2. User select guest mode. |
| Expected Behavior | 1.The user can turn on or off guest mode. 2.User can choose parameter settings according to their own preferences. For example, user can customize the welcome message. And user can turn privacy protection on or off. |
| Post Conditions | N/A |
| Exceptions | N/A |



3.2 Smart Order

There is some smart orders, such as commute order, weekend order and so on.

User can use them directly, or modify the setting parameters according to their own needs.

3.2.1 Modify and Edit order

| Use Case ID | Modify and Edit order |
|----------------|--|
| Use Case | Users can modify and edit order. |
| Pre-Conditions | 1.IV1 is running. 2.Network is available. |

| | |
|-------------------|--|
| Main flow | <ol style="list-style-type: none"> 1. Go to the order center page, and select my order. 2. Select an order and select "edit". 3. Add or delete some commands. 4. Modify detailed parameters. 5. Modify start condition. |
| Expected Behavior | An order is modified. |
| Post Conditions | N/A |
| Exceptions | N/A |



3.2.2 Activate order

| Use Case ID | Activate order |
|-------------------|--|
| Use Case | Users can activate a mode. |
| Pre-Conditions | <ol style="list-style-type: none"> 1.IVI is running. 2.Network is available. |
| Main flow | <ol style="list-style-type: none"> 1.If order is automatically turned on, notify user for confirmation before running. <p>After user clicks the confirmation, homepage displays the operation instruction.</p> <ol style="list-style-type: none"> 2.User can click on the order card in my order, homepage displays the operation instruction. |
| Expected Behavior | An order is activated. |
| Post Conditions | N/A |
| Exceptions | N/A |

3.3 Personal Enjoyment

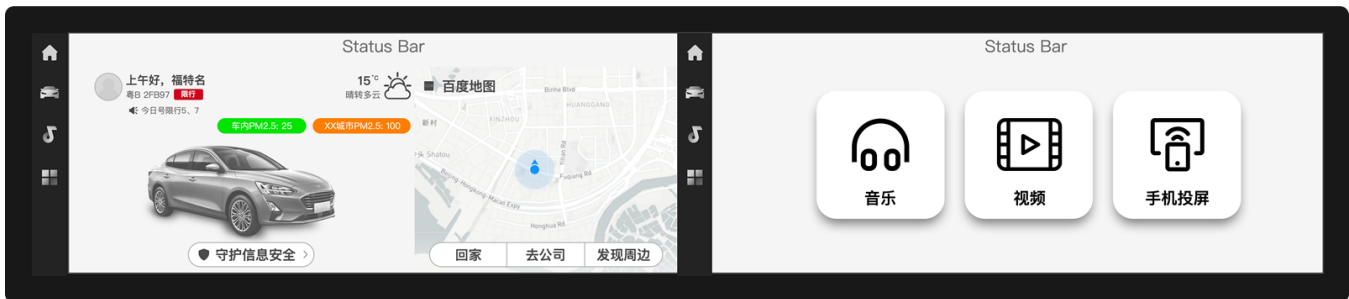
On weekends, after driving the children to the training class, the father/mother wants to relax while waiting for the child. So he/she remotely starts the engine with his/her phone and approaches his/her Lincoln car,

When he/she approaches the car, the door unlocks automatically. Then he/she enters the car from the passenger door and sits in the passenger seat, and start enjoying his/her personal moments.

3.3.1 Personal Enjoyment Main Page

| Use Case ID | Personal enjoyment main page |
|-------------|--|
| Use Case | User starts enjoying his/her personal moments. |

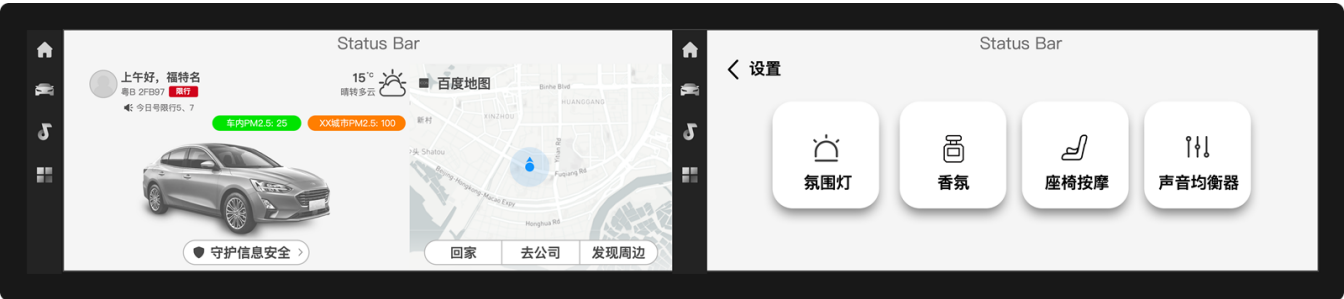
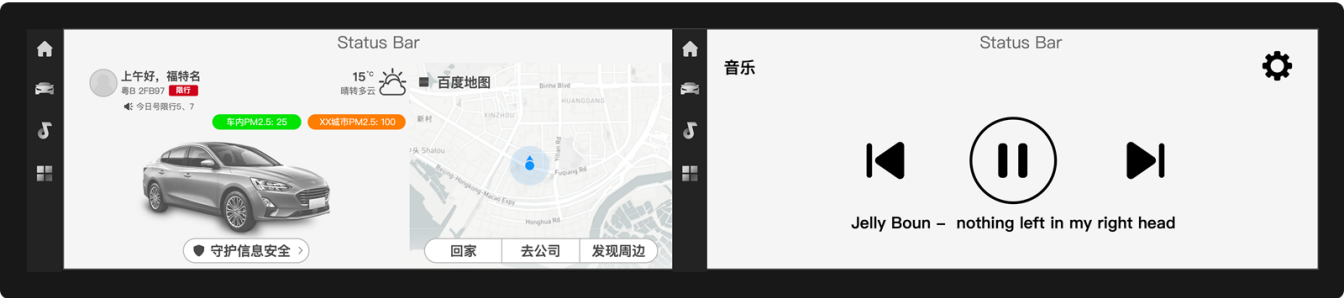
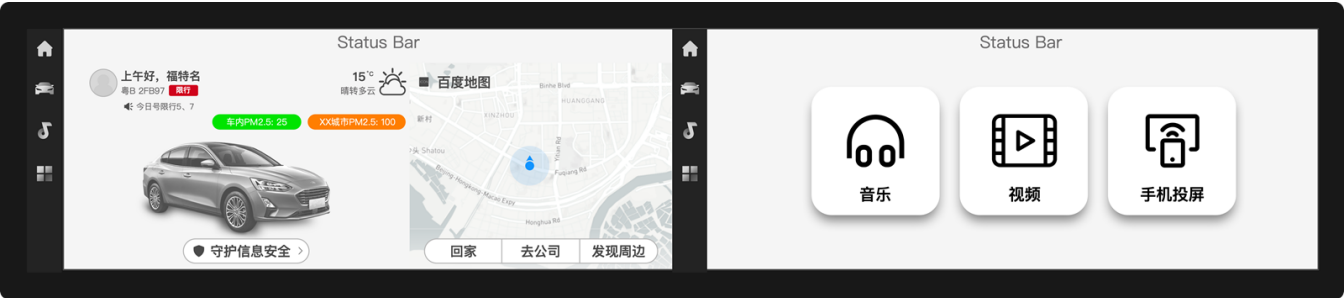
| | |
|-------------------|---|
| Pre-Conditions | 1.IVI is running. 2.Network is available. |
| Trigger | 1. User select dashcard of immersive mode. 2. User opens immersive mode via VPA. |
| Expected Behavior | 1.The system automatically enters split screen mode. 2.There are three entrances on the interface: music, video and mobile phone screen projection. For example, user can select the music to enjoy his/her personal moments. |
| Post Conditions | N/A |
| Exceptions | N/A |



3.3.2 Activate immersive music experience

| Use Case ID | Activate immersive music experience |
|-------------------|---|
| Use Case | Users want to enjoy an immersive music experience. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. |
| Main flow | 1.User selects music card on main page of immersive mode and enter music playing page. 2.User clicks music to play, then enters the immersive mode automatically. 3.Associated startup hardware: <ul style="list-style-type: none"> The ambient light is turned on automatically and its brightness changes to follow the rhythm of the music; Seat massage is turned on automatically. The digital scent is turned on automatically. 4.User can adjust the ambient light, digital scent, seat massage and sound equalizer by setting options. |
| Expected Behavior | 1.A music is playing; 2.The ambient light, seat massage and digital scent is turned on. |
| Post Conditions | N/A |

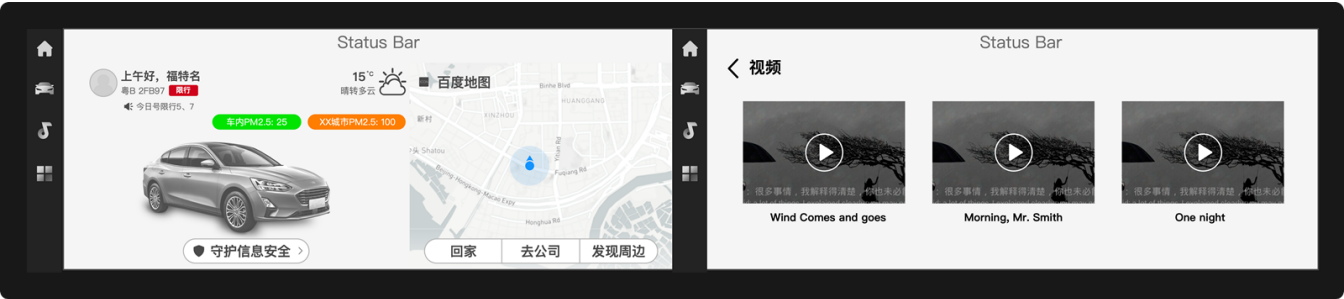
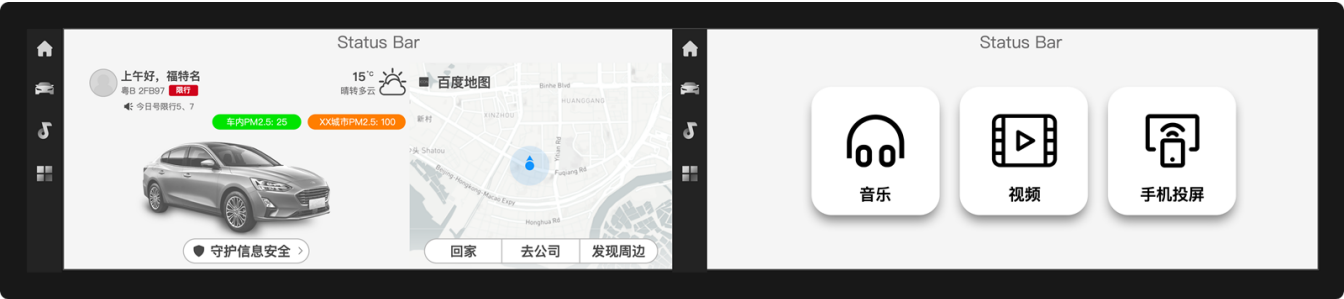
| | |
|------------|-----|
| Exceptions | N/A |
|------------|-----|



3.3.3 Activate immersive video experience

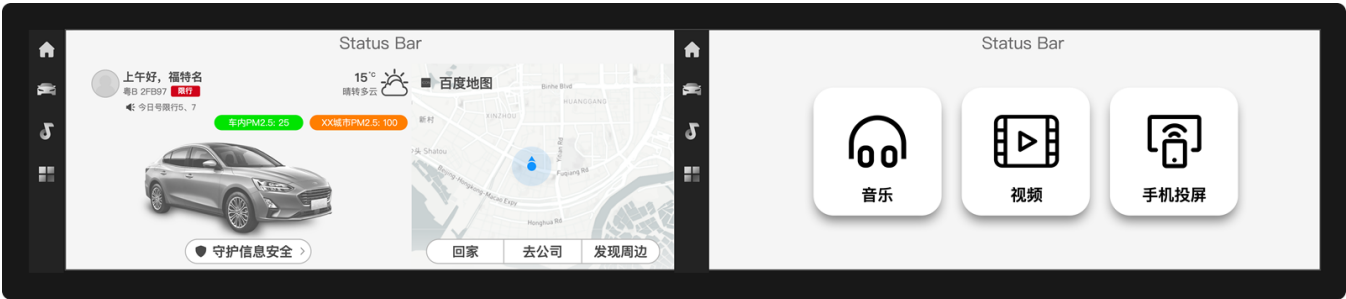
| Use Case ID | Activate immersive video experience |
|----------------|--|
| Use Case | Users want to enjoy an immersive video experience. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. |

| | |
|-------------------|--|
| Main flow | <div>1.User selects video card on main page of immersion mode and enter video playing page.</div> <div>2.User selects a video to play, then enters the immersion mode automatically.</div> <div>3.Associated startup hardware:<ul style="list-style-type: none">• The ambient light is turned on automatically.• Seat massage is turned on automatically.• The digital scent is turned on automatically.• The left half of the screen goes black.</div> <div>4.User can adjust the ambient light, digital scent, seat massage by setting options.</div> |
| Expected Behavior | <div>1.A video is playing;</div> <div>2.The ambient light, seat massage and digital scent is turned on.</div> |
| Post Conditions | N/A |
| Exceptions | N/A |



3.3.4 Activate mobile phone projection immersive experience

| Use Case ID | Activate mobile phone projection immersive experience |
|-------------------|--|
| Use Case | Users want to enjoy a mobile phone projection immersive experience. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. |
| Main flow | 1.User selects mobile phone projection card on main page of immersion mode. 2.Once the phone projection is successfully connected, it will automatically enter the immersive mode. 3.Associated startup hardware: <ul style="list-style-type: none">• The ambient light is turned on automatically.• Seat massage is turned on automatically.• The digital scent is turned on automatically.• The left half of the screen goes black. 4.User can adjust the ambient light, digital scent, seat massage by setting options. |
| Expected Behavior | 1.A video from the phone is projected onto the IVI screen. 2.The ambient light, seat massage and digital scent is turned on. |
| Post Conditions | N/A |
| Exceptions | N/A |



3.3.5 Exit the music immersive experience

| Use Case ID | Exit the music immersive experience |
|-------------------|---|
| Use Case | Users want to exit a music immersion experience. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. |
| Trigger | <ol style="list-style-type: none"> 1. User clicks the back key. 2. User exit immersive mode via VPA(TBD). |
| Expected Behavior | <ol style="list-style-type: none"> 1. Music stop; 2.The ambient light returns to the state before immersive mode. 3.Seat massage returns to the state before immersive mode. 4.The scent and open state of digital scent return to the pre-immersive state. |
| Post Conditions | N/A |
| Exceptions | N/A |

3.3.6 Exit the video immersive experience

| Use Case ID | Exit the video immersive experience |
|-------------------|--|
| Use Case | Users want to exit a video immersion experience. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. |
| Trigger | <ol style="list-style-type: none"> 1. User clicks the back key. 2. User exit immersive mode via VPA.(TBD) |
| Expected Behavior | <ol style="list-style-type: none"> 1. Video stop; 2.The ambient light returns to the state before immersive mode. 3.Seat massage returns to the state before immersive mode. 4.The scent and open state of digital scent return to the pre-immersive state. 5.The left screen returns to the lit display. |
| Post Conditions | N/A |
| Exceptions | N/A |

3.3.7 Exit the mobile phone projection immersive experience

| Use Case ID | Exit the mobile phone projection immersive experience |
|----------------|---|
| Use Case | Users want to exit the mobile phone projection immersive experience. |
| Pre-Conditions | 1.IVI is running. 2.Network is available. |
| Trigger | <ol style="list-style-type: none"> 1. User clicks the turn off phone projection button. 2. User exit immersive mode via VPA.(TBD) |

| | |
|-------------------|--|
| Expected Behavior | 1. Phone projection function is off; 2.The ambient light returns to the state before immersive mode. 3.Seat massage returns to the state before immersive mode. 4.The scent and open state of digital scent return to the pre-immersive state. 5.The left screen returns to the lit display. |
| Post Conditions | N/A |
| Exceptions | N/A |

4 Interface Requirements

4.1 External Interface Requirements