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|  | Relax | | |  |
|  | ( F004131) | | |  |
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| GIS2 Classification: | **Confidential** | |
|  | | | | |
|  | | | | |
| Document Approval | | | | |
| Person | Role | | Email Confirmation | Date |
|  |  | |  |  |
|  |  | |  |  |

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**Important Note**

You need to use the RE specification macros provided by the “RE\_SpecificationMacroTemplate.dotm” (refer to “Utilities” on [page “Specification Templates” in the RE Wiki](http://wiki.ford.com/display/RequirementsEngineering/Specification+templates)) to allow seamless VSEM import of the specification content. **Use only these RE specification macros to create requirements** in this specification. Refer to “[How to use the Specification Templates](http://wiki.ford.com/display/RequirementsEngineering/How+to+use+the+Specification+Templates?src=contextnavpagetreemode)” on how to enable and use the macros and the requirements templates in this specification.

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# Introduction

## Document Purpose

A Feature Document (FD) document specifies **what** the feature shall do and how it shall behave from customer perspective. It should also provide reasoning and background **why** we have the feature in the vehicle.

The FD also serves as an Item Definition as defined by ISO26262 for those features, which follow the Ford Functional Safety process.

To get more information about the concept of feature, function and component level abstraction refer to the [Ford RE Wiki](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Engineering+for+SW+Enabled+Features). For details on the Ford Functional Safety (ISO26262) process refer to the [Ford Functional Safety Sharepoint](https://pd3.spt.ford.com/sites/GlobalFunctionalSafety/Pages/default.aspx).

## Document Scope

This Feature Document (FD) specifies the feature Relax. Relax is a feature which could help the driver and passengers to have a relax on vehicle. IVI can be used, in combination with other elements of the vehicle (lighting, audio, HMI graphics, and Digital scent) to create an immersive experience for relax.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Feature ID** | **Feature Name** |  |  | **Owner** | **Reference** |
| <Add VSEM Global Feature Dictionary ID> | Relax |  |  | Zhang Xiaojing | <Add VSEM Link> |
|  |  |  |  |  |  |

Table 1: Features described in this FD

## Document Audience

The FD is written by the feature owner of Relax. All Stakeholders, i.e., all people who have a valid interest in the feature should read and, if possible, review the FD. It needs to be guaranteed, that all stakeholders have access to the currently valid version of the FD.

**#Hint:** The FD template has the IP Classification “Proprietary” by default. IP Classification “Confidential” might be required in some cases, e.g. by Ford Functional Safety.

**#Macro:** [Add Ins -> Edit Document Properties macro](http://wiki.ford.com/display/RequirementsEngineering/How+to+use+the+Specification+Templates#HowtousetheSpecificationTemplates-EditDocProperties) (select “Proprietary” for “Document Classification”)

### Stakeholder List

For the latest list of stakeholders of the feature and their influence refer to <Put VSEM Link here>.

**#Hint:** Refer to [Ford RE Wiki – Stakeholder List](http://wiki.ford.com/display/RequirementsEngineering/Stakeholder+Analysis) on how to create a stakeholder list. The stakeholder list should be stored in VSEM in the pseudo folder “General Data Artifacts” of the corresponding feature.

## Document Organization

### Document Context

Refer to the [Specification Structure page](http://wiki.ford.com/display/RequirementsEngineering/Specification+templates) in the [Ford RE Wiki](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Engineering+for+SW+Enabled+Features) to understand how the FD relates to other Ford Requirements Documents and Specifications.

### Document Structure

The structure of this document is explained below:

**Section 1** – Introduction how to use this document including responsibilities and requisite documents. Explains the terminology. Gives a clarification of the definitions, concepts and abbreviations used in the document.

**Section 2** – Feature Description. States briefly the background and the purpose of the feature, feature variants and corresponding regions and markets. Also includes input requirements, assumptions and constraints.

**Section 3** – Feature Context describes all external entities, which have an influence on the feature.

**Section 4** – Feature Modeling. Contains Use Case, Driving Scenarios, State Charts to describe the functional behavior of the feature.

**Section 5** – Safety. Lists System Behaviors and Safety Goals of the feature.

**Section 6** – Feature Requirements. Lists functional and non-functional requirements of the feature.

**Section 7** – Architecture. Shows the coarse architecture, which the feature requirements are deployed to. Describes the elements and the boundary of the feature as well as the decomposition and distribution of associated functions.

**Section 8** – List of Open Concerns

**Section 9** – Document Change History including a list of new or modified requirements. The requirements in this document are tagged, and this section contains different types of tables listing all, new, or changed requirements by their title and page no.

**Section 10** – Appendix

**#Hint:** All sections are mandatory, unless explicitly marked by the tag “#Classification” as “optional” or as applicable e.g. to certain domains like “Functional Safety”.

## Document Conventions

### Requirements Templates

Refer to “[How to use the Specification Templates](http://wiki.ford.com/display/RequirementsEngineering/How+to+use+the+Specification+Templates?src=contextnavpagetreemode)” on how to use the specification templates and the VBA macros to create/edit the requirements in the specifications.

The VBA macro enable the import of the specification to VSEM (refer to ["How to import specifications into VSEM as separate requirements"](http://wiki.ford.com/pages/viewpage.action?pageId=104991616&src=contextnavpagetreemode)).

#### Identification of requirements

The unique requirement ID given in the headline of any requirement follows the requirement throughout the development process. The requirement ID format follows a well-defined syntax.

All identifiers in a FD shall be composed of 4 parts:

* A leading prefix, which indicates the type of requirement (R=Requirement, UC=Use Case, SC=Scenario, …)
* A prefix, which indicates the abstraction level (F=Feature, FNC=Function, CMP = component).
* Followed by a name, indicating the scope, which the requirement belongs to (e.g. feature or function name)
* Ending with the actual requirement number

*Example:*

*R\_F\_AutoLamps\_00004* This is the fourth requirement on feature level for the feature Autolamps.

#### Requirements Attributes

The templates provided by *Specification\_Macros.dotm* define a list of attributes for each requirement. This helps to classify the requirement. The attributes are explained at [RE Wiki - Requirements Attributes](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes?src=contextnavpagetreemode).

## References

### Ford Documents

List here all Ford internal documents, which are directly related to the feature.

| **Reference** | **Title** | **Doc. ID** | **Document Location** | **Revision** |
| --- | --- | --- | --- | --- |
| e.g. [ARL\_xyz] | e.g. “Attribute requirements List of the feature” |  |  |  |
|  |  |  |  |  |

Table 2: Ford internal Documents

### External Documents and Publications

The list of external documents could include books, reports and online sources.

**#Hint:** You may refer to [IEEE Citation Reference](http://www.ieee.org/documents/ieeecitationref.pdf) on how to format a reference.

| **Reference** | **Document / Publication** | **Document Location** |
| --- | --- | --- |
| [bbb] |  |  |
|  |  |  |

Table 3: External documents and publications

## Glossary

**#Hint**: Terms, concepts and abbreviations used in the document shall be defined and illustrated here. Note that changes to terms and/or concepts described in this section tend to cause major updates to this document.

The tables below have feature specific definitions and abbreviations. For additional, non-feature specific terms please refer to the [RE Glossary](http://wiki.ford.com/display/RequirementsEngineering/Glossary?src=contextnavpagetreemode)

### Definitions

| **Definition** | **Description** |
| --- | --- |
|  |  |
|  |  |
|  |  |

Table 4: Definitions used in this document

### Abbreviations

| **Abbr.** | **Stands for** | **Description** |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

Table 5: Abbreviations

### Parameters / Values

| **Name** | **Description** | **Range / Resolution** |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

Table 6: Parameters / Values used in this document

# Feature Overview

## Purpose and Description of Feature

**#Hint:** Some descriptive text to explain the purpose and functionality of the feature.

The Relax Feature to the Lincoln portfolio utilizes existing or in development systems (Audio, Video, Displays, Seat Massaging, Seat Position, Scent) with added elements to deliver a unique choreographed experience designed to at first relax the user and then alter the experience to make the user more alert and ready to tackle the rest of their day.

Relax can be used in the following scenarios:

* After everyday work
* After stressful work or social activities, like overtime working, business dinner
* Take a break in between the long-distance driving, such as have a short rest in highway rest-stops
* When waiting for child, friends or clients
* Share the moment with passengers

The main functions of the feature are:

* Select different relax experience theme on IVI: Instant Relaxation, Forest ambience and Ocean.
* Control the relax module by IVI
* Modify the parameters in relaxing theme, such as adjusting the seat massage, adjusting the scent intensity.
* Select different relaxation experiences theme by voice.

Take Forest theme for example, After Forest theme is activated, the vehicle takes him to a place in nature, showing forest scenes of the IVI, playing birds chirping, ambient lighting turning to Green, and outputting the scent of nature, seat is automatically adjusted to a comfortable position. The user breaths in deeply, smiles, and relaxes himself in his personal retreat, created by Lincoln.

## Feature Variants

**#Hint:** List all known variants of the feature applying to current and upcoming programs. Reference each variant by a descriptive name. If no variant exists, state “No Feature Variants”. The “Variant Description” table column should give a short informative text, which describes the variant of the feature.

Requirements in chapter “Feature Requirements”, which do not apply for all variants, should clearly state, which variants they are applicable for.

|  |  |  |
| --- | --- | --- |
| Variant Name | Variant Description | Remarks |
|  |  |  |
|  |  |  |
|  |  |  |

Table 7: Feature Variants

### Regions & Markets

**#Hint:** Description of purpose and functionality of the feature. If there is no variant, give feature name in first column.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Market /**  **Region**  Variant Name | **North America** | **South America** | **Europe** | **Middle East / Africa** | **Asia / Pacific** | **China** |
|  |  |  |  |  |  | Optional |

Table 8: Regions & Markets

## Input Requirements/Documents

**#Hint:** List relevant documents or requirements, which should be considered when considered when specifying the requirements in chapter “Feature Requirements” of this document. When finalizing the spec, the feature owner should check, if all inputs have been properly considered by derived/outgoing requirements.

|  |  |  |  |
| --- | --- | --- | --- |
| **Reference**  (Reference as listed in ch. “References) | **Section/Requirement** | **Description** | **Derived Requirement**  (optional – reference to requirement in ch. “Feature Requirements”) |
| **Attribute Requirements** | | | |
|  | <Example:  id + title of attribute requirement> | <Example: “attribute requirement(s) of feature xyz”> | <If you reference a requirement in this column, that requirement should have a trace link in its [“Source”/”Source Req.” attribute](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) field referring back to the input requirement (or to a requirement inside the input document) given in this table row> |
|  |  |  |  |
| **Ford Engineering Standards** | | | |
|  | <Example: id + title of some SDS (requirement)> |  |  |
|  |  |  |  |
| **Legal Regulations** | | | |
|  | <Example: some paragraph from ECE or FMVSS> |  |  |
|  |  |  |  |
| **Industry Standards** | | | |
|  | <Example: some ISO/IEEE/SAE or other standard> |  |  |
|  |  |  |  |
| **Other Sources** | | | |
|  | <Example: some stakeholder document> |  |  |
|  |  |  |  |

Table 9: Input Requirements/Documents

## Lessons Learned

**#Hint:** Additional information and lessons learned from previous development or related features. A typical source for Lessons Learned is the FMA Quality History.

**#Functional Safety:** In context of Functional Safety Lessons Learned and similar information will be used to check the completeness of the Functional Safety Goals and assumptions in the Hazard Analysis and Risk Assessment (HARA).

**#Link:** [Ford Functional Safety Sharepoint](https://pd3.spt.ford.com/sites/GlobalFunctionalSafety/Pages/default.aspx)

## Assumptions

**#Classification**: Optional

**#Hint:** A list of known assumptions concerning the effects of the feature’s behavior on other features or elements (i.e., dependencies) as well as assumptions on the behavior expected by the feature (e.g. known limitations). During the course of the feature development most of those assumptions are typically either converted into actual requirements or disvehicleded at some point – such that this chapter remains mostly empty. For assumptions, which are relevant for the Functional Safety process refer to chapter 6.2 “Safety Assumptions”

# Feature Context

## Feature Context Diagram

**#Hint:** High level diagram of feature interactions with the environment, people or other feature or other external entities.

**#Link:** [RE Wiki - Context Diagram](http://wiki.ford.com/pages/viewpage.action?pageId=107676234&src=contextnavpagetreemode)

**

Figure 1: Relax Context Diagram

## List of Influences

|  |  |  |
| --- | --- | --- |
| **ID** | **External Entity** | **Influence Description** |
| I1 | activate/deactivate | Driver could activate/deactivate the feature |
| I2 | activate/deactivate | Passengers could activate/deactivate the feature |

Table 10: List of Influences

# Feature Modeling

## Operation Modes and States

**#Classification:** Optional (Mandatory for Functional Safety)

**#Link:** [RE Wiki – State Charts](http://wiki.ford.com/display/RequirementsEngineering/State+Charts?src=contextnavpagetreemode)

**#Hint:** State Charts are a popular means to express feature behavior in terms of states and modes. An advantage of this state machine like approach is that consistency can be easily verified.

## Use Cases

**#Classification:** Optional

**#Link:** [RE Wiki – Use Cases](http://wiki.ford.com/display/RequirementsEngineering/Use+Cases+Overview?src=contextnavpagetreemodehttp://wiki.ford.com/display/RequirementsEngineering/Use+Cases?src=contextnavpagetreemode)

### Use Case Diagram

**

Figure 2: Use Case Diagram

### Actors

| Actor | Description |
| --- | --- |
| Driver/passengers | Person who is able to activate/deactivate the function |

Table 13: List of Actors

### Use Case Descriptions

**#Classification:** Optional

**#Macro:** [Add Ins -> Add Requirement macro](http://wiki.ford.com/display/RequirementsEngineering/How+to+use+the+Specification+Templates#HowtousetheSpecificationTemplates-AddNewRequirement) (select “Use Case” as type)

#### Activate/Deactivate Relax

Relax theme running criteria:

Both of the following criterion should be met to run the theme.

1. The car must be parked. (Shift gear to P)
2. Engine is on OR **Ready to drive mode** is on

When the criteria are not met, the user can still open the App, while not be able to run the theme.

Relax Theme Running Trigger Points:

1. Direct start from launcher card(TBD).
2. Voice Command.
3. Clicking on theme card in App.

When users want to enjoy Relax, relax app needs to confirm whether the digital scent and seat massage is available. It also needs to confirm the current state (on or off) of ambient light, digital scent and seat massage.

The specific flow chart is shown in Figure 3 and Figure 4.

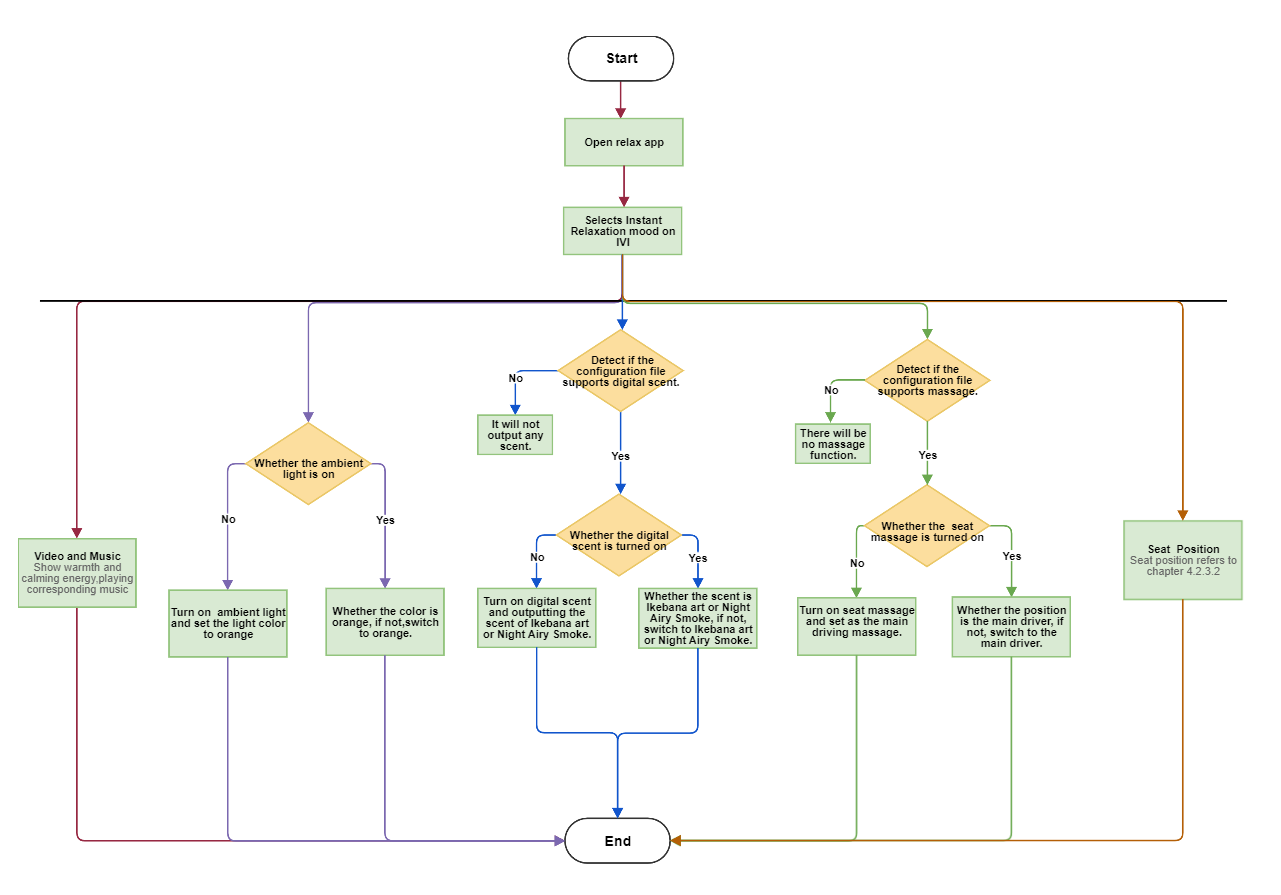


Figure 3: Flow chart of Activate Relax

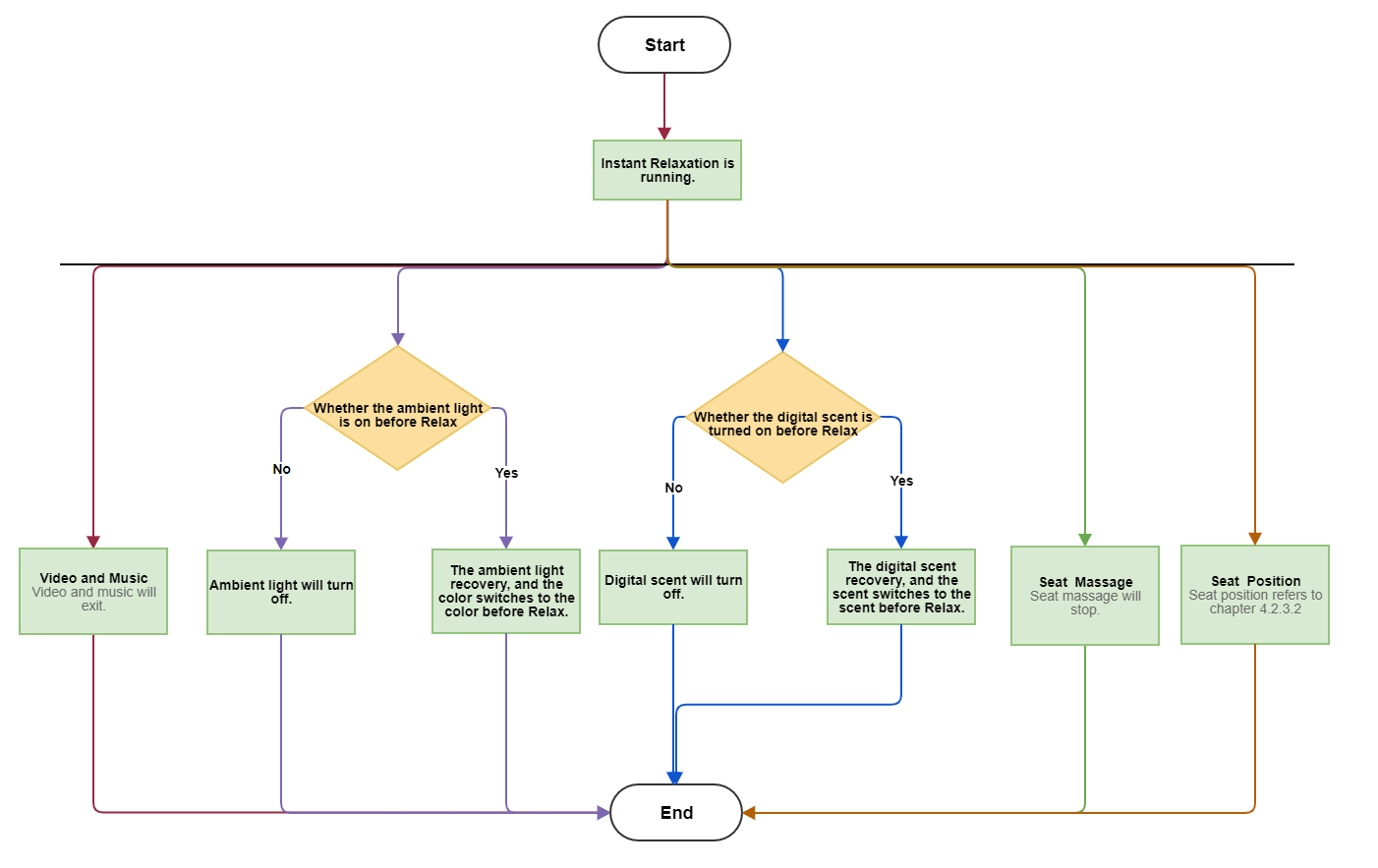


Figure 4: Flow chart of Deactivate Relax

###UC\_F\_Relax\_00001### Activate Relax App

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to enjoy Relax in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on 2. Vehicle dynamic/static |
| **Main Flow** | M1 | The user finds the Relax icon on home page by swiping right to left. |
|  | M2 | The user clicks the Relax icon. |
|  | M3 | Enter the home page of Relax app. |
|  | M4 | The homepage has the following content:   1. Three theme icons: Instant relaxation, Forest and Ocean. 2. A back button: Exit the application and return to the previous page. |
|  |  |  |
| **Alternative Flow 1** |  | The user selects more services on home page，and finds the Relax app on more service page by sliding up and down. It will switch to M2. |
| **Alternative Flow 2** |  |  |
| **Post Conditions** |  | Relax app is opened. |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00002### Activate Enjoy Instant Relaxation

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to enjoy Instant Relaxation in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates Relax app. |
|  | M2 | The user selects Instant Relaxation theme on IVI: |
|  | M3 | If Instant Relaxation theme is activated:   1. The page gradually brightens from black; 2. showing “warmth and calming energy” video in the IVI, playing corresponding music, the ambient light turns to orange； 3. Outputting the scent of Ikebana Art or Night Airy Smoke, and the scent refers to chapter 4.2.3.5. 4. User feels the reclined massaging seats; 5. The driver seat moves to a comfortable position, and the position refers to chapter 4.2.3.2 (only available when vehicle is in stationary).   Sound, video, ambient light, fragrance, seat massage will follow the sequences according to UX definition. |
|  |  |  |
| **Alternative Flow 1** |  | If user says, “Start Instant Relaxation”, it will switch to M2. |
|  |  |  |
| **Post Conditions** |  | Enjoy instant relaxation is activated. |
| **Exceptions** |  | If no seat massage is available, there will be no massage function.  If no digital scent is available, it will not output any scent. |

###UC\_F\_Relax\_00003### Deactivate Enjoy Instant Relaxation

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User does not want to enjoy Instant Relaxation in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on  2. Shift gear to P  3. Enjoy instant relaxation is running. |
| **Main Flow** | M1 | The user clicks anywhere on video on IVI |
|  | M2 | There is a pop-up display on IVI. |
|  | M3 | The user clicks the “close” button. |
|  | M4 | The Instant relaxation theme will end, and the end sequence definition is also in the UX documents.  Audio and Video will exit, seat massage will stop, ambient lighting will close, and digital scent will close.  If the driver seat moves to a comfortable position, it will move back to the latest memorized position in current enhanced memory. |
| **Alternative Flow 1** |  | If user says, “Stop Instant Relaxation”, it will switch to M4. |
| **Alternative Flow 2** |  | When the shift lever is not in P gear, IVI pop-up box prompts a countdown of 10 seconds to deactivate the Instant relaxation. Instant relaxation will be disabled. It will switch to M4. |
|  |  |  |
| **Post Conditions** |  | Enjoy instant relaxation is disabled. |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00004### Activate Enjoy Forest Theme

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to enjoy forest ambience in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates Relax app. |
|  | M2 | The user selects Forest Theme on IVI |
|  | M3 | If Forest Theme is activated:   1. The page gradually brightens from black; 2. Showing “forest ambience” video in the IVI, playing corresponding music, the ambient light turns to green; 3. Outputting the scent of Happy Moment or Grass Neroli, and the scent refers to chapter 4.2.3.5. 4. User feels the reclined massaging seats; The Massage level is highest. 5. The driver seat moves to a comfortable position, and the position refers to chapter 4.2.3.2 (only available when vehicle is in stationary).   Sound, video, ambient light, fragrance, seat massage will follow the sequences according to UX definition. |
|  |  |  |
| **Alternative Flow 1** |  | User says “ start Forest theme ”it will switch to M2 |
|  |  |  |
| **Post Conditions** |  | Enjoy instant relaxation is activated. |
| **Exceptions** |  | If no seat massage is available, there will be no massage function.  If no digital scent is available, it will not output any scent. |

###UC\_F\_Relax\_00005### Deactivate Enjoy Forest theme

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User does not want to enjoy forest theme in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on  2. Shift gear to P  3. Enjoy forest theme is running. |
| **Main Flow** | M1 | The user clicks anywhere on the video on IVI |
|  | M2 | There is a pop-up display on IVI. |
|  | M3 | The user clicks the “close” button. |
|  | M4 | The Forest theme will end, and the end sequence definition is also in the UX documents.  Audio and Video will exit, seat massage will stop, ambient lighting will close, and digital scent will close.  If the driver seat moves to a comfortable position, it will move back to the latest memorized position in current enhanced memory. |
| **Alternative Flow 1** |  | If user says, “Stop Forest theme”, it will switch to M4. |
| **Alternative Flow 2** |  | When the shift lever is not in P gear, IVI pop-up box prompts a countdown of 10 seconds to deactivate the Forest theme. Forest theme will be disabled. It will switch to M4. |
|  |  |  |
| **Post Conditions** |  | Enjoy Forest theme is disabled. |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00006### Activate Enjoy Ocean Theme

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to enjoy Ocean theme in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates Relax app. |
|  | M2 | The user selects Ocean Theme on IVI |
|  | M3 | If Ocean theme is activated:   1. The page gradually brightens from black; 2. Showing “Ocean” video in the IVI, playing corresponding music, the ambient light turns to blue; 3. Outputting the scent of Story of Love or Ocean of Flowers, and the scent refers to chapter 4.2.3.5. 4. User feels the reclined massaging seats; The Massage level is highest. 5. The driver seat moves to a comfortable position, and the position refers to chapter 4.2.3.2 (only available when vehicle is in stationary).   Sound, video, ambient light, fragrance, seat massage will follow the sequences according to UX definition. |
|  |  |  |
| **Alternative Flow 1** |  | User says “Start Ocean Theme”, it will switch to M2 |
|  |  |  |
| **Post Conditions** |  | Enjoy Ocean theme is activated. |
| **Exceptions** |  | If no seat massage is available, there will be no massage function.  If no digital scent is available, it will not output any scent. |

###UC\_F\_Relax\_00007### Deactivate Enjoy Ocean theme

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User does not want to enjoy Ocean theme in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on  2. Shift gear to P  3. Enjoy Ocean theme is running. |
| **Main Flow** | M1 | The user clicks anywhere on the video on IVI |
|  | M2 | There is a pop-up display on IVI. |
|  | M3 | The user clicks the “close” button. |
|  | M4 | The Ocean theme will end, and the end sequence definition is also in the UX documents.  Audio and Video will exit, seat massage will stop, ambient lighting will close, and digital scent will close.  If the driver seat moves to a comfortable position, it will move back to the latest memorized position in current enhanced memory. |
| **Alternative Flow 1** |  | If user says, “Stop Ocean theme”, it will switch to M4. |
| **Alternative Flow 2** |  | When the shift lever is not in P gear, IVI pop-up box prompts a countdown of 10 seconds to deactivate the Ocean theme. Ocean theme will be disabled. It will switch to M4. |
|  |  |  |
| **Post Conditions** |  | Enjoy Ocean theme is disabled. |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00008### The theme running page

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | Tell the user how to use it. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates Relax app, and select a theme to start. |
|  | M2 | The theme running page has the following content:   1. Name of theme; 2. Setting button: can adjust the seat massage and digital scent type. 3. A back button: Return to the main page of Relax. Video pause, music background playback, and the seat massage, ambient light and digital scent remain. The current theme is marked to indicate that it is playing. 4. Close button: Stop themes.   If the user has not done anything, the information, a back button and setting button are hidden after 3 seconds and then entered into the full-screen immersion mode.  If the car does not have seat massage and digital scent function, there is no setting button. |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00009### The Relax Card Display

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | Tell the user how to use it. |
| **Pre-Conditions** |  | 1. IVI is running. |
| **Main Flow** | M1 | The user can find a Relax card in Launcher-Dash cards. |
|  | M2 | When no theme run in background, the Relax cards has the following content:   1. Name: 2. View button: go to main screen of Relax.   Click on this card to go to Relax’s main screen. |
|  | M3 | When one theme is running in background, the Relax cards has the following content:   1. Name: 2. Continue button: Back to theme. 3. End button: Close theme.   Click on this card to back to theme page. |
| **Post Conditions** |  |  |
| **Notes** |  | Relax’s card, by default, is displayed in the Launcher page and can be hidden by editing. |

#### Seat Position related

##### Function Description

When the user wants to enjoy Relax, he activates the Relax app, and selects a theme to start. And then the driver seat is automatically adjusted to a comfortable position. Seat position change only applies to driver seat. Passenger seat position will not move.

To implement the automatic seat movement, the recommended solution is below,

Utilize the 3rd enhance memory for the relax mode, only 2 set of enhance memories could be used for users.

As we know there are 4 memories in DSM EEPROM, Position 1, 2, 3 is used for Memory 1,2,3. Position 4 is used for last position, the position 3 for enhance memory is utilized by relax mode.



Figure 5: Seat Position of Relax Context Diagram

##### Use case related

###UC\_F\_Relax\_000010### Relax app does not do any operation on the seat for the first time.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | The user wants to set his relax position. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app for the first time. |
|  | M2 | IVI has a pop-up prompt to ask if you want to set your own relax position. |
|  | M3 | The user clicks “no”. |
|  | M4 | The user selects a theme to start. |
|  | M5 | Seat will not move. The seat position is the current position. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_000011### User can sets relax position

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | The user wants to set his/her relax position. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app for the first time. |
|  | M2 | IVI has a pop-up prompt to ask if you want to set your own relax position. |
|  | M3 | The user clicks “yes”, and then user manually adjusts the seat to a favorite position. |
|  | M4 | The user selects a theme to start. |
|  | M5 | Seat is automatically adjusted to this favorite position. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |



Figure 6: Seat Position Sequence Diagram for use case 10 and 11

###UC\_F\_Relax\_00012### Seat position is only changed automatically

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | The user wants to enjoy Relax experience. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Seat is automatically adjusted to a Relax position (user already has set the Relax position). |
|  | M3 | The user deactivates relax experience. |
|  | M4 | Seat needs to be switched to the pre-relax position. |
|  |  |  |
| **Post Conditions** |  |  |

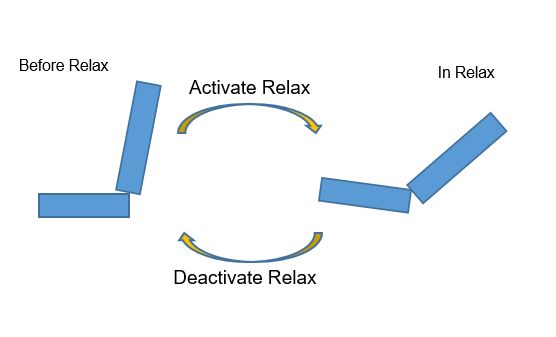


Figure 7: Seat Position Switch in use case 12



Figure 8: Seat Position Sequence Diagram in use case 12

###UC\_F\_Relax\_00013### User can modify the relax position through the relax settings.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | The user wants to modify his/her relax position. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | The user select the setting button, and select seat position adjustment. |
|  | M3 | The user manually adjusts the seat to a favorite position. |
|  | M4 | This relax position is modified. |
|  |  |  |
| **Post Conditions** |  | This relax position is modified. |
| **Exceptions** |  | Remove seat setting button if DSM configuration is off |

###UC\_F\_Relax\_00014### Seat position status for active interruption

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat position, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | When driver seat is being automatically adjusted to Relax position, the user suddenly deactivates relax. |
|  | M3 | Seat needs to be switched to the pre-relax position. |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00015### Seat position needs to be restored after Relax

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | The user wants to enjoy Relax experience. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Seat will be automatically adjusted to Relax position.  But for some reason (there is a hard block behind the seat), the position stopped without reaching Relax position. |
|  | M3 | The user deactivates relax experience. |
|  | M4 | Seat needs to be switched to the pre-relax position. |
|  |  |  |
| **Post Conditions** |  |  |
| **Notes** |  | As long as the user does not manually adjust the seat during relax, the seat needs to be restored to the pre-relax position when exiting relax. |

###UC\_F\_Relax\_00016### Seat position status for Ignition Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat position, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Seat is automatically adjusted to Relax position. |
|  | M3 | If the following happens:   1. The vehicle changed to ignition off state suddenly for unknown reason. 2. The user turns ignition off. |
|  | M4 | Relax exit.  The seat does not work, and the seat stays in its current position. |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00017### Seat position status for ACC Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat position, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Seat is automatically adjusted to Relax position. |
|  | M3 | If the following happens:   1. The vehicle changed to ACC off state suddenly for unknown reason. 2. The user turns ACC off. |
|  | M4 | Relax exit automatically.  The seat does not work, and the seat stays in its current position. |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00018### Seat position after Ignition Off or ACC Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat position, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | Last time the vehicle was suddenly ignition off or ACC OFF during relax.  The seat position stays in the position before the exception exits. |
| **Main Flow** | M1 | The user starts the vehicle again. |
|  | M2 | The seat position stays in the position before the exception exits.   1. The user can manually adjust the seat positions. 2. When an account is logged in, the seat will automatically adjust to the position associated with the account. |
|  |  |  |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00019### Seat position status between account and Relax

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat position, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. The account has been associated with the driver profile. |
| **Main Flow** | M1 | Here are some interaction logic settings for account and relax.   1. When an account is logged in, the user goes to enjoy Relax, and the seat is automatically adjusted to the relax position. 2. If the account is not logged in, the user goes to enjoy Relax, and the seat is automatically adjusted to the relax position.   During the relax, the user logs into account. At this time, the seat will set the corresponding seat position according to the driver profile. |
|  |  |  |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00020### Seat position status between FaceID and Relax

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat position, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. FaceID has been associated with the account and the account has been associated with the driver profile. |
| **Main Flow** | M1 | When starting IVI, the user wants to enjoy Relax, which is in conflict with account profile settings (include seat position) after FaceID has been successfully identified.  Here are some interaction logic settings as follows:   1. Before Relax activated, FaceID has been successfully detected, and the seat is set the corresponding seat position according to the account profile. If user wants to enjoy Relax, the seat is automatically adjusted to the relax position. 2. When use activates relax before the FaceID detection is successfully, the seat position is automatically adjusted to relax position.   During relax, if FaceID is detected, the account is not allowed to issue seat setting commands. |
|  |  |  |
| **Post Conditions** |  |  |

#### Change the state and parameters of relax

###UC\_F\_Relax\_00021### Change relax theme

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User does not like the relax theme that is currently open, and wants to change one. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user clicks anywhere on video on IVI |
|  | M2 | There is a pop-up display on IVI. |
|  | M3 | The user clicks the “close” button. |
|  | M4 | This relaxed theme that is running will be disabled. And go back home page of relax, and then choose another theme to open. |
| **Alternative Flow 1** |  | User says, “Start Instant Relaxation”, it will active Instant Relaxation.  User says, “Start Forest theme”, it will active Forest Theme.  User says, “Start Ocean theme”, it will active Ocean Theme. |
| **Alternative Flow 2** |  | The user clicks “the back button” to back home page of relax, and then choose another theme to open. |
|  |  |  |
| **Post Conditions** |  | Changed another relax theme. |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00022### Change the seat massage position or deactivate seat massage.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to change the seat massage position or deactivate seat massage. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user clicks “setting” button on the home page of relax. |
|  | M2 | There is a pop-up display. |
|  | M3 | The user can choose the position of driver, copilot, driver and copilot and deactivate the seat massage. |
|  | M4 | After the user selects, click Confirm. |
| **Alternative Flow 1** |  |  |
|  |  |  |
| **Post Conditions** |  | Changed the seat massage position or deactivated seat massage. |
| **Exceptions** |  | If no seat massage is available, there will be no massage option displayed in the pop-up. |

###UC\_F\_Relax\_00023### Change the digital scent or turn off digital scent function

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to change the digital scent or turn off digital scent function. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user clicks “setting” button on the home page of relax. |
|  | M2 | There is a pop-up display. |
|  | M3 | There are four options: three scents and a close button.  The user can choose three different scents or turn off digital scent function. |
|  | M4 | After the user selects, click Confirm. |
| **Alternative Flow 1** |  |  |
|  |  |  |
| **Post Conditions** |  | Changed the scent or turned off digital scent function. |
| **Exceptions** |  | If no digital scent is available, there will be no digital scent option displayed in the pop-up. |

#### Customer reminders

###UC\_F\_Relax\_00024### Safe Notification

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | Reminder customer in special situation |
| **Pre-Conditions** |  | Car parking |
| **Main Flow** | M1 | The user activates Relax app. |
|  | M2 | It will pop up a reminder to help the user uses enjoy the Relax properly and safely.  “Please don’t enjoy this experience in a confined space for long periods of time.” |
|  |  |  |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00025### Engine off/ not in Park Notification

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | Reminder customer in special situation |
| **Pre-Conditions** |  | When parking, the engine is off or not in P gear. |
| **Main Flow** | M1 | The user activates Relax app. |
|  | M2 | The user selects a theme to start. |
|  |  | It will pop up a reminder to help the user uses enjoy the Relax properly and safely.  “Relax is temporarily unable to run. Please confirm that the engine is turned on and the vehicle is in P gear.” |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00026### Driving Notification

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | Reminder customer in special situation |
| **Pre-Conditions** |  | 1.Engine on OR ready for drive mode is on  2.The vehicle is in motion. |
| **Main Flow** | M1 | The user activates Relax app. |
|  | M2 | The user selects a theme to start. It will pop up a reminder.  “Theme is temporarily disabled for safety reasons while the vehicle is moving. Please stop and try again.” |
|  |  |  |
| **Post Conditions** |  |  |

#### Digital scent related

###UC\_F\_Relax\_00027### One theme corresponds to two scents.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | One theme corresponds to two scents.   1. Instant relaxation: Ikebana Art or Night Airy Smoke. 2. Forest: Happy Moment or Grass Neroli. 3. Ocean: Story of Love or Ocean of Flowers. |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00028### The theme selects one of them at random when there are two corresponding scents.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | When three boxes have two corresponding scents, the theme selects one of them at random.  For example:  Three boxes have these two scents: Story of Love and Ocean of Flowers. And when user activate enjoy Ocean theme, the scent of one of the two is randomly output.  Note: The corresponding scent of Ocean theme is Story of Love and Ocean of Flowers. |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00029### The theme does not output any scents when there are no corresponding two scents.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | When there are no two corresponding scents in three boxes, the theme does not output any scents.  For example:  These two scents (Story of Love and Ocean of Flowers) are not detected in the three boxes. And when user activate enjoy Ocean theme, the theme does not output any scents.  Note: The corresponding scent of Ocean theme is Story of Love and Ocean of Flowers. |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00030### The intensity of the scent cannot be set in Relax app.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | Output the scent corresponding to theme. |
|  | M3 | User cannot set the intensity of the scent in Relax app.  If the user wants to modify it, he/she needs to go into the vehicle Settings to modify the intensity. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00031### The scent can be modified in relax app.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | Output the scent corresponding to theme. And user can modify the scent.   1. When no corresponding scent is detected, no scent is output, and user can select the scent through the setting menu of Relax. 2. When user doesn’t like the current scent, user can modify the scent through the setting menu of Relax. |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00032### The scent of digital scent needs to be restored after relax experience.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. The digital scent has been turned on. |
| **Main Flow** | M1 | The user activates the Relax app. |
|  | M2 | The user selects a theme to start |
|  | M3 | The scent of digital scent needs to be switched to the scent corresponding to the theme.  Note: The scent of theme cannot be modified. |
|  | M4 | The user turns off relax experience. |
|  | M5 | The digital scent recovery, and the scent switches to the scent before the relax experience. |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00033### The scent and intensity in vehicle settings is changed manually during relax experience.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax app and selects a theme to start.  The user presses the home button to return to the home page. |
|  | M2 | The use modified the scent and intensity through the vehicle settings. |
|  | M3 | The scent and intensity in the vehicle is this modified setting. |
|  | M4 | The user deactivates the relax experience. |
|  | M5 | The scent and intensity are this modified parameter in vehicle settings. |
| **Alternative Flow 1** |  | User says, “Change another scent”, and “Lower the intensity”, it will switch to M3. |
| **Alternative Flow 2** |  | User says, “Turn on the first scent”, or “Turn on the second scent”, or “Turn on the third scent”, it will switch to M3. |
| **Alternative Flow 3** |  | User says, “Adjust the intensity to high”, or “Adjust the intensity to medium”, or “Adjust the intensity to low”, or “Increase the intensity”, it will switch to M3. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00034### The scent setting in vehicle settings need to be restored after relax experience.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | 1. The scent corresponding to this theme are turned on. 2. The scent in the vehicle settings are synchronized with the parameters in the theme. |
|  | M3 | The user deactivates the relax experience. |
|  | M4 | The scent in vehicle settings is restored to the scent before the relax was turned on. |
| **Alternative Flow 1** |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00035### Digital scent status for Ignition Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Scent A is outputted if the scent setting is A for this theme. |
|  | M3 | If the following happens:   1. The vehicle changed to ignition off state suddenly for unknown reason. 2. The user turns ignition off. |
|  | M4 | Relax exit.  The scent A is off |
| **Alternative Flow 1** |  | If the scent output is off when Relax, the scent remains off until the user changes the setting of Relax. |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00036### Digital scent status for ACC Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Scent A is outputted if the scent setting is A for this theme. |
|  | M3 | If the following happens:   1. The vehicle changed to ACC off state suddenly for unknown reason. 2. The user turns ACC off. |
|  | M4 | Relax exit.  Scent A is off. |
| **Alternative Flow 1** |  |  |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00037### Digital scent status after Ignition Off or ACC Off (TBD)

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For digital scent, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | UC\_F\_Relax\_00036 & UC\_F\_Relax\_00037 |
| **Main Flow** | M1 | Engine on |
|  | M2 | Scent is off, but the scent setting keeps on scent A |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00038### Digital Scent Life Notification 1

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | There are some notifications about digital scent life. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. The residue of Scent A is insufficient (less than 20%). |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | Output the scent A corresponding to this theme. |
|  | M3 | When the residue of Scent A is less than 20%, it will pop up a notification to help the user uses enjoy the Relax comfortably.  “The current use of scent A is about to run out, please pay attention to timely replacement.”  Click this message box to jump to the digital scent settings. |
| **Alternative Flow 1** |  | User select other theme, and selects the scent A through the setting menu in Relax, or through the vehicle settings, it will switch to M3. |
| **Post Conditions** |  |  |
| **Note** |  | In Relax, notifications are not broadcast by voice. |

###UC\_F\_Relax\_00039### Digital Scent Life Notification 2

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | There are some notifications about digital scent life. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. The residue of Scent A is insufficient (less than 5%). |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | Output the scent A corresponding to this theme. |
|  | M3 | When the residue of Scent A is less than 5%, it will pop up a notification to help the user uses enjoy the Relax comfortably.  “The current use of scent A is about to run out, please visit the Lincoln Way app for a replacement box.” (TBD)  Click this message box to jump to the digital scent settings. |
| **Alternative Flow 1** |  | User select other theme, and selects the scent A through the setting menu in Relax, or through the vehicle settings, it will switch to M3. |
| **Post Conditions** |  |  |
| **Note** |  | In Relax, notifications are not broadcast by voice. |

###UC\_F\_Relax\_00040### Notifications will be given 20 days in advance that the scent is about to expire.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | There are some reminders about expiration of the digital scent. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | Output the scent A corresponding to this theme. |
|  | M3 | When scent A is about to expire, a reminder will pop up 30 days in advance.  “This scent has 20 days to expire, please replace it in time.” |
|  |  |  |
| **Alternative Flow 1** |  | User select other theme, and selects the scent A through the setting menu in Relax, or through the vehicle settings, it will switch to M3. |
| **Post Conditions** |  |  |
| **Note** |  | In Relax, notifications are not broadcast by voice. |

###UC\_F\_Relax\_00041### Notifications will be given 10 days in advance that the scent is about to expire.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | There are some reminders about expiration of the digital scent. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | Output the scent A corresponding to this theme. |
|  | M3 | When scent A is about to expire, a reminder will pop up 10 days in advance.  “This scent has 10 days to expire, please replace it in time.” |
|  |  |  |
| **Alternative Flow 1** |  | User select other theme, and selects the scent A through the setting menu in Relax, or through the vehicle settings, it will switch to M3. |
| **Post Conditions** |  |  |
| **Note** |  | In Relax, notifications are not broadcast by voice. |

###UC\_F\_Relax\_00042### Notifications that the digital scent is expired.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | There are some notifications about expiration of the digital scent. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There’s expired scent in the scent box. E.g: Scent A. |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | Output the scent A corresponding to this theme. |
|  |  | When the residue of Scent A is expired, it will pop up a notification to help the user uses enjoy the Relax comfortably.  “In order to ensure your health and best experience, please avoid using expired or uncertified Lincoln China fragrance products.”  Note: The scent corresponding to this theme is scent A. |
|  |  |  |
| **Alternative Flow 1** |  | User select other theme, and selects the scent A through the setting menu in Relax, or through the vehicle settings, it will switch to M3. |
| **Post Conditions** |  |  |
| **Note** |  | In Relax, notifications are not broadcast by voice. |

###UC\_F\_Relax\_00043### Abnormal digital scent reminder

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | There are some reminders about abnormal digital scent. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax experience and selects a theme to start. |
|  | M2 | Output the scent A corresponding to this theme. |
|  | M3 | When the following abnormal occurs: motor abnormal, fan abnormal, temperature too high and temperature too low, it will pop up a reminder.  “The digital scent is abnormal, and the scent will not be released temporarily.” |
|  |  |  |
| **Post Conditions** |  |  |

#### Seat massage related

###UC\_F\_Relax\_00044### Seat massage does not need to be restored after relax experience.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat massage, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The seat massage has been turned on.  The user activates the Relax app. |
|  | M2 | The user selects a theme to start |
|  | M3 | The seat massage position and massage intensity need to be switched to the corresponding parameters in the theme.  E.g. Before the seat massage position was a co-pilot, the intensity was medium. Then after entering the relax, first turn off the massage of the co-pilot, and turn on the massage of driver, and the intensity is set to completely relax. |
|  | M4 | The user deactivates relax experience. |
|  | M5 | The seat massage is turned off.  Whether or not the seat massage is turned on before activating the relax experience, when turning off relax experience, the seat massage is turned off. |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00045### Seat massage parameters of theme cannot be changed.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat massage, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax app and selects a theme to start. |
|  | M2 | 1. The seat massage parameters are set to default values: position is driver and the intensity is completely relaxed. 2. The seat massage parameters (position and intensity) in the vehicle settings are synchronized with the parameters in the theme. |
|  | M3 | User changes the seat massage parameters in the relax setting, which takes effect in real time.  Note: The seat massage parameters in the vehicle settings and relax settings are synchronized in real time during the relax experience. |
|  | M4 | The user deactivates relax experience. |
|  | M5 | The user activates relax again, selects a theme to start. |
|  | M6 | The seat massage parameters are still the default.  Note: Seat massage parameters modified in the relax experience are not saved. |
| **Alternative Flow 1** |  | User returns to the home page to modify the seat position and intensity in the vehicle settings, which takes effect in real time, it will switch to M4. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |
|  |  |  |

###UC\_F\_Relax\_00046### Seat massage status for Ignition Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat massage, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Seat massage is on according to user’s setting in Relax |
|  | M3 | If the following happens:   1. The vehicle changed to ignition off state suddenly for unknown reason. 2. The user turns ignition off. |
|  | M4 | Seat massage is off |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00047### Seat massage status for ACC Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat massage, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Seat massage is on according to user’s setting in Relax |
|  | M3 | If the following happens:   1. The vehicle changed to ACC off state suddenly for unknown reason. 2. The user turns ACC off. |
|  | M4 | Relax exit automatically.  The seat massage is off. |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00048### Seat massage status after Ignition Off or ACC Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For seat massage, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | UC\_F\_Relax\_000047 or UC\_F\_Relax\_000048 |
| **Main Flow** | M1 | Engine on OR ready for drive mode is on |
|  | M2 | Seat massage is off, nothing setting data related to massage will be saved. |
| **Post Conditions** |  |  |

#### Ambient light related

###UC\_F\_Relax\_00049### Ambient light of theme cannot be changed.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For ambient light, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates relax app and selects a theme to start. |
|  | M2 | The ambient light corresponded to this theme turns on.  Note: Each theme corresponds to a specific ambient light color |
|  | M3 | User returns to the home page to modify the ambient light parameter in the vehicle settings, which takes effect in real time. |
|  | M4 | The user deactivates relax experience. |
|  | M5 | The user activates relax again and selects a theme to start. |
|  | M6 | The ambient light is still the default. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00050### Ambient light needs to be restored after relax experience.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For ambient light, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. The ambient light has been turned on. |
| **Main Flow** | M1 | The user activates the Relax app. |
|  | M2 | The user selects a theme to start |
|  | M3 | The ambient light color needs to be switched to the ambient light color corresponding to the theme. |
|  | M4 | The user deactivates relax experience. |
|  | M5 | The ambient light recovery, and the parameter switches to the parameter before the relax experience. |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00051### Ambient light status for Ignition Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For ambient light, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Corresponding ambient light is on |
|  | M3 | If the following happens:   1. The vehicle changed to ignition off state suddenly for unknown reason. 2. The user turns ignition off. |
|  | M4 | Relax exit automatically.  Ambient light is off |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00052### Ambient light status for ACC Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For ambient light, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app and selects a theme to start. |
|  | M2 | Corresponding ambient light is on |
|  | M3 | If the following happens:   1. The vehicle changed to ACC off state suddenly for unknown reason. 2. The user turns ACC off. |
|  | M4 | Relax exit automatically.  The ambient light is off. |
| **Post Conditions** |  |  |

###UC\_F\_Relax\_00053### Ambient light status after Ignition Off or ACC Off

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | For ambient light, some interaction logic needs to be defined. |
| **Pre-Conditions** |  | UC\_F\_Relax\_00052, UC\_F\_Relax\_00053 |
| **Main Flow** | M1 | Engine on |
|  | M2 | ambient is off. |
|  | M3 | User open the ambient light, and the last color (the last relax color) is turned on. |
|  |  |  |
| **Post Conditions** |  |  |

#### Settings in Relax

###UC\_F\_Relax\_00054### Settings page in Relax app

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | When one of the Theme is on, there will be some other things occurs, so some interface logic should be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user clicks anywhere on the video on IVI |
|  | M2 | There is a setting button, and user clicks this button. |
|  | M3 | The setting page in Relax has the following content:   1. Slide the settings item up and down; 2. Seat massage: driver (default) 3. Digital scent types: If the corresponding scent is installed, display the corresponding name.   If the scent is unknown/unauthorized/uninstalled, the name will not be displayed.   1. Rule of focus: If the corresponding theme scent is installed, focus on the corresponding name;   If there is no corresponding scent, focus on off.  If the car only has seat massage, then the setting page only has seat massage function.  If the car only has digital scent, then the setting page only has digital scent function.  If the car does not have seat massage and digital scent function, there is no setting button. |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

#### Relax interaction with other apps

###UC\_F\_Relax\_00055### Phone call in during relax experience

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | When one of the Theme is on, there will be some other things occurs, so some interface logic should be defined. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | When the user enjoys the relax theme, a phone call in. |
|  | M2 | Music and video will pause, the seat massage remains, the digital scent and the ambient light remains.  After call end, music and video will resume. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00056### Relax experience runs in the background

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | The user wants to want to do other things during relax experience. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user presses the home button to return to the home page. |
|  | M2 | Relax experience run in the background. |
|  | M3 | Video pause, music background playback, and the seat massage, ambient light and digital scent remain. |
|  | M4 | Enter relax app again, the interface returns to the interface before exiting, and video will resume. |
| **Alternative Flow 1** |  | User says “Back to homepage”, it will switch to M2. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00057### Watch video during relax experience

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | The user wants to watch videos during relax experience. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user presses the home button to return to the home page. |
|  | M2 | The user opens video software such as iQiyi. |
|  | M3 | The music and video of relax are paused, but the seat massage, ambient light and digital scent remain.  The music and videos in the relax experience cannot be modified. |
|  |  |  |
| **Alternative Flow 1** |  | User says “I want to watch video”, and select a video to play, it will switch to M3. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00058### Play own playlist during relax experience

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | The user wants to plan his own playlist during relax experience. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user presses the home button to return to the home page. |
|  | M2 | The user opens music player such as QQ music. |
|  | M3 | The music and video of relax are paused, but the seat massage, ambient light and digital scent remain.  The music and videos in the relax experience cannot be modified. |
| **Alternative Flow 1** |  | User says “I want to listen to songs”, and select a song to play, it will switch to M3. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

#### Screen setting in relax

###UC\_F\_Relax\_00059### Screen setting for relax experience.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to enjoy Relax experience in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app. The user selects a theme to start. |
|  | M2 | Screen settings are as follows:   1. If it is in Solo mode, it will remain in Solo mode after entering relax experience. 2. If it is in Co-pilot mode, it will remain in Co-pilot mode after entering relax experience. 3. If it is in Individual mode, it will become Co-pilot mode after entering relax experience. |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00060### Activate the theme in Individual mode.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to enjoy Relax experience in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | The user activates the Relax app in Individual mode driver side. |
|  | M2 | The user selects a theme to start.  A message will show to prompt Mode Switch Confirmation.  “The theme full screen experience is better, and the split screen will be close for you soon.”   1. The user clicks on “confirm switch”. Then user view the theme with full screen view under co-pilot mode. 2. User clicks “cancel”. Then the theme will not go in and the screen is still individual mode. |
|  | M3 | When theme is running in co-pilot mode.  If user click “Close” button, it will back to Relax home page under co-pilot mode. |
|  |  |  |
| **Alternative Flow 1** |  | The user activates the Relax app in Individual mode passenger side. It will switch to M2. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00061### Car driving reminder in Individual mode.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to enjoy Relax experience in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on  2. The vehicle is in motion. |
| **Main Flow** | M1 | The user activates the Relax app in Individual mode driver side. |
|  | M2 | The user selects a theme to start. It will pop up a reminder.  “The theme is temporarily disabled for safety reasons while the vehicle is moving. Please stop and try again." |
|  |  |  |
| **Alternative Flow 1** |  | The user activates the Relax app in Individual mode passenger side. It will switch to M2. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00062### Engine off/ Not Parked Reminder in Individual mode.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to enjoy Relax experience in the vehicle. |
| **Pre-Conditions** |  | When parking, the engine is off or not in P gear. |
| **Main Flow** | M1 | The user activates the Relax app in Individual mode driver side. |
|  | M2 | The user selects a theme to start. It will pop up a reminder.  “\*\*\*theme is temporarily unavailable. It has been turned off for you.” |
|  |  |  |
| **Alternative Flow 1** |  | The user activates the Relax app in Individual mode passenger side. It will switch to M2. |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00063### Split Screen Confirmation during theme is running.

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to enjoy Relax experience in the vehicle. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user clicks on split screen button when the theme is running. |
|  | M2 | The confirmation shows.  “This feature cannot be used in split screen. Are you sure to switch split screen?”   1. The user clicks on “cancel”, it stays in co-pilot or solo mode, the theme continues. 2. The user clicks on “confirm switch”, theme ends, user switch to individual mode, and back to Relax home page on driver side. |
|  |  |  |
| **Alternative Flow 1** |  |  |
| **Post Conditions** |  |  |
| **Note** |  | Relax theme cannot run under individual mode. |

#### Other cases

###UC\_F\_Relax\_00064### Turn off/on the screen during relax experience (TBD)

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to turn off the screen during the relax experience. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user clicks “volume” button. |
|  | M2 | The IVI screen turns off, music and video pause, the seat massage remains, the digital scent remains, the ambient light remains. |
|  | M3 | When the screen is turned on, music and video will resume. |
|  |  |  |
| **Post Conditions** |  | IVI screen is off. |
| **Exceptions** |  | If no seat massage is available, there will be no massage function.  If no digital scent is available, it will not output any scent. |

###UC\_F\_Relax\_00065### Ignition off during relax experience

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | User wants to power off and get off. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The user turns ignition off, opens the door and get off. |
|  | M2 | IVI big screen will power off black screen; music and video will exit; the seat massage will stop; the digital scent will close; ambient light will close. |
|  |  |  |
| **Post Conditions** |  |  |
| **Note** |  | This process is the same as exiting relax. Whether the parameter of relax app is saved or not is the same as exiting relax. |

###UC\_F\_Relax\_00066### The vehicle suddenly stalls during the relax experience

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | Some interaction logic needs to be defined in the case of a vehicle suddenly stalling. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P  3. There is a relax theme that is running. |
| **Main Flow** | M1 | The vehicle suddenly stalls for unknown reasons. |
|  | M2 | IVI big screen will power off black screen; music and video will exit; the seat massage will stop; the digital scent will close; ambient light will close.  Note: The process is the same as closing the theme. Whether the parameter is saved or not is the same as closing the theme. |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

###UC\_F\_Relax\_00067### Data collection

|  |  |  |
| --- | --- | --- |
| **Actors** |  | Driver and passengers |
| **Purpose** |  | System will collect all the user operation of Relax and push the data to Cloud. |
| **Pre-Conditions** |  | 1. Engine on OR ready for drive mode is on  2. Shift gear to P |
| **Main Flow** | M1 | System will collect all the user operation of Relax and push the data to Cloud.The data collected is below,   1. All button events, such us mode select. If the user clicks the“forest” theme, the system will count up all “forest” click event. |
|  | M2 |  |
|  |  |  |
| **Post Conditions** |  |  |
| **Exceptions** |  |  |

## Driving and Operation Scenarios

**#Classification:** Optional (Mandatory for Functional Safety)

**#Macro:** [Add Ins -> Add Requirement macro](http://wiki.ford.com/display/RequirementsEngineering/How+to+use+the+Specification+Templates#HowtousetheSpecificationTemplates-AddNewRequirement) (select “Scenario” as type)

**#Functional Safety:** Driving and operating scenarios which impact the functionality of the feature can be used to check, if the situation analysis in the HARA is complete

**#Link:** [RE Wiki – Driving Scenarios](http://wiki.ford.com/display/RequirementsEngineering/Driving+Scenarios?src=contextnavpagetreemode)

## Decision Tables

**#Classification:** Optional

**#Link:** [RE Wiki – Decision Tables](http://wiki.ford.com/display/RequirementsEngineering/Decision+Table).

**#Hint:** Use decision table, if behavior is not state based (in that case prefer state chart from ch. 4.1) and based purely on current inputs.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Input 1** | **Input 2** | **Input 3** | **Input 4** | **Output** |
| Value I1 | Value I2 |  |  | Value O1 |
|  |  |  |  |  |

Table 14: Sample Decision Table

# Architecture

## Feature Boundary Diagram

Here is a feature boundary diagram about Relax. From this diagram, we can know which module are involved in Relax app.



Figure 10: Feature Boundary Diagram

## Functional Architecture

**#Classification:** Mandatory for Functional Safety – otherwise optional

**#Hint**: This section depicts the coarse Functional Architecture. This architectural step is needed to find the right functional partitioning for the function level. The function shown here are those, which are specified on function level. Either SysML activity diagrams or Data Flow Diagrams could be used to depict such a Functional Architecture. For bigger features, which are decomposed in a hierarchical manner down to atomic functions (and which do not follow the Functional Safety process), a function tree could be given here.

**#Links:**

* Functional Decomposition: [RE Wiki – Functional Decomposition](http://wiki.ford.com/display/RequirementsEngineering/Functional+Decomposition)
* SysML - Activity Diagrams or [RE Wiki - Data Flow Diagrams](http://wiki.ford.com/display/RequirementsEngineering/Data+Flow+Diagram?src=contextnavpagetreemodehttp://wiki.ford.com/display/RequirementsEngineering/Data+Flow+Diagram?src=contextnavpagetreemode)
* Data Flow Diagram: [RE Wiki – Data Flow Diagram](http://wiki.ford.com/display/RequirementsEngineering/Functional+Decomposition)



Figure 10: Functional Boundary Diagram

### Logical Functions

**#Hint:** The functions shown in the Functional Architecture should be listed and described in the table below

|  |  |  |
| --- | --- | --- |
| **Function ID** | **Function Name** | **Function Description** |
| Fn002661 | Ambient Lighting | Control ambient lighting setting |
| Fn000024 | Vehicle Speed | Provide vehicle speed |
| Fn003580 | Ignition Status Detection | Provide vehicle ignition status |
|  | Music Playing | Play specific music file |
|  | Volume Setting | Control music volume setting |
|  | HMI interface | Touch screen interface and voice control interface |
| FnG001033 | Multi-Contour Seat Control | Control seat massage |
|  | Data Collection& Upload | Upload user data to cloud |
|  | Fragrance Control | Control the fragrance module and feedback status |
|  | In Vehicle Temperature | In vehicle temperature sensing |
|  | Driver seat position control | Control the seat’s movement to different position |

Table 19: List of Functions

## Electrical Architecture

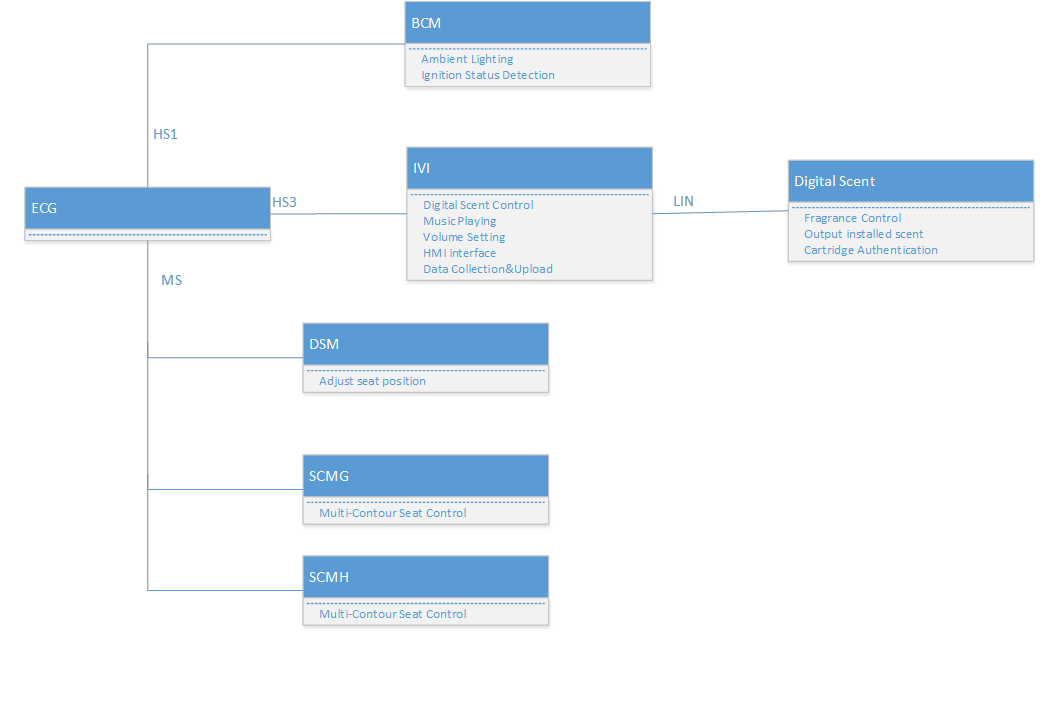


Figure 11: Electrical System Architectures for Relax

### Description of Electrical Components

|  |  |
| --- | --- |
| **Component Name** | **Description** |
| ECG |  |
| IVI | Get input from customers and arbitrate various output |
| Fragrance Module | Diffuse the fragrance, feedback status |
| BCM | Control ambient lighting, provide ignition status |
| DSM | Control seat position |
| RCCM | Control climate related function |
| SCMG/SCMH | Control driver/passenger seat massage |

### Electrical Connections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Connection Name** | **Type** | **Description** | **Allocated Messages** | **Connected Nodes** |
| HS1 CAN | High Speed CAN | High Speed 1 CAN network |  | BCM, ECG |
| HS3 CAN | High Speed CAN | High Speed 3 CAN network |  | IVI |
| MS CAN | Medium Speed CAN | Medium Speed CAN network |  | DSM, SCMG, SCMH |
| LIN | LIN | LIN between IVI and Fragrance module |  | IVI, Fragrance module |

Table 10: Electrical Connections

### Message flow



Figure 12: Message Flow diagram for Relax

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Signal Name** | **Description** | **Signal Encoding** | **Send Module** | **Received  Module** |
| RelaxPositionSet\_Rq | When the users want to set their own Relax seat position, the message will be send out to trigger the seat position saving. | 0x0=initial value 0x1= set position | APIM | DSM |
| RelaxPositionSet\_Stat | It's the response of RelaxPositionSet\_Rq, the  parameter is successful or failure. | 0x0=set success 0x1=Set failure | DSM | APIM |
| RelaxPositionActivate\_Rq | After the Relax is activated, this message  will send out to trigger the seat position  movement to the saving or default position. | 0x0=initial value 0x1= activate relax | APIM | DSM |
| RelaxPositionActivate\_Stat | It's the response of RelaxPositionActivate\_Rq, the parameter is successful or failure. | 0x0=seat adjust success 0x1=seat adjust failure | DSM | APIM |
| RelaxPositionDeactivate\_Rq | This message is used to deactivate the Relax, the seat position will try to return back | 0x0=initial value 0x1= deactivate relax | APIM | DSM |
| RelaxPositionDeactivate\_Stat | It's the response of RelaxPositionDeactivate\_Rq, the parameter is successful or failure. | 0x0=seat back success 0x1=seat back failure | DSM | APIM |
| BSBattSOC | If the SOC value low than 40%, the relax theme doesn’t allow to play | (0x0)  127 (0x7F) | GWM | APIM |
| PwPckTqRdy\_B\_Dsply | Ready for Drive Mode | 0x0 off  0x1 on | PCM | APIM APIM\_CIM IPC |

## Logical Architecture

**#Classification:** Functional SafetyAnalysis only

**#Hint:** FS Analysis requires a description of the boundary of the feature and its elements. A simple block diagram or a SysML Internal Block Diagram could be used to depict the Logical Architecture

**#Link:** [Ford Functional Safety Sharepoint](https://pd3.spt.ford.com/sites/GlobalFunctionalSafety/Pages/default.aspx)

### Logical Elements

**#Hint:** Lists the elements of the Logical Architecture and the functions from the Functional Architecture, which are allocated to those elements.

|  |  |  |  |
| --- | --- | --- | --- |
| **Element Name** | **Description** | **Allocated Functions** | **Comments** |
| e.g. Active Tilt Controller | … | e.g. Control Value |  |
|  |  |  |  |
|  |  |  |  |

Table 20: Logical Elements

### Logical Interfaces

**#Hint:** Describe the interactions of the feature with other features or elements.

|  |  |  |  |
| --- | --- | --- | --- |
| **Interface Name** | **Direction** | **Description** | **Value Range** |
| e.g. Vehicle tilt angle | e.g. Tilt angle sensor to ATC | … | e.g. -45deg to +45deg |
|  |  |  |  |
|  |  |  |  |

Table 21: Logical Interfaces

# Feature Requirements

**#Macro:** [Add Ins -> Add Requirement macro](http://wiki.ford.com/display/RequirementsEngineering/How+to+use+the+Specification+Templates#HowtousetheSpecificationTemplates-AddNewRequirement) (select “Requirement” as type)

**#Hint**: Include functional requirements specifying quality, performance and availability of the functionality. The subsections of this chapter help not to forget aspects, which are typically relevant on feature level. It is not possible and not required to always strictly classify a requirement according to the subsections.

**#Functional Safety:** In general, safety requirements are not listed here. However, it is possible that later in the development process, a non-safety requirement becomes a safety requirement. In such a case it may remain on this list.

**#Link:** [RE Wiki – How to write good requirements](http://wiki.ford.com/display/RequirementsEngineering/How+to+write+better+requirements?src=contextnavpagetreemode).

## Functional Requirements

### General Behavior

*###Relax-F-R\_0001:###Relax (TBD)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | | | | |
|  | | | | |
| **Rationale** | | | | |
|  | | | | |
| **Acceptance Criteria** | | | | **DVM** |
|  | | | |  |
| **Notes** | | | | |
|  | | | | |
| **Type** | Functional | **Source** |  | |
| **Priority** | Mandatory | **ASIL** | N/A | |
| **Stability** | Draft | **Known Conflicts** | none | |

### Error Handling *requirement*

*###DigitalScent-F-R\_0004:### Relax Error Detection (TBD)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | | | | |
| IVI shall detect Relax related errors, it shall show a message to the user, how to possibly cure the error. | | | | |
| **Rationale** | | | | |
|  | | | | |
| **Acceptance Criteria** | | | | **DVM** |
|  | | | |  |
| **Notes** | | | | |
| Error1: If a theme is activated but found that the seat massage does not work.  Error2: If a theme is activated but found that the digital scent does not work.  The user message might refer to the “trouble shooting” section of the user manual. | | | | |
| **Type** | Functional | **Source** |  | |
| **Priority** | Mandatory | **ASIL** | N/A | |
| **Stability** | Draft | **Known Conflicts** | none | |

## Non-Functional Requirements

***#Hint:*** *Non-functional requirements specify quality attributes in addition to the pure functional behavior given by the functional requirements. Examples for quality attributes: Performance (e.g. data throughput), timing (if not already included in the functional requirements), security (e.g. how secure does an algorithm have to be), reliability (e.g. mean time between failure) or maintainability.*

### Safety

**#Classification:** Optional (Remove, if not used

**#Hint:** Only those safety requirements, which are not related to Functional Safety (ISO26262) should go here. For Functional Safety refer to chapter 6 “Functional Safety”.

### Security

**#Classification:** Optional (Remove, if not used

### Reliability

**#Classification:** Optional (Remove, if not used

## HMI Requirements

**#Hint:** Requirements in this section could specify details of e.g. the icons, the GUI or the sounds.

## Other Requirements

### Design Requirements

***#Hint:*** *Requirements of a Logical Function should be typically agnostic of their SW/HW implementation*. If for *specific reasons the function owner needs to define explicitly design constraints on the solution, it can be done in this chapter.*

### Manufacturing Requirements

### Service Requirements

***#Hint:*** *Requirements in this section could specify, e.g. what needs to be considered, if individual ECUs are* *replaced or new SW is flashed to ECUs (parameter set in non-volatile memory might get inconsistent and needs also to be updated).*

#### Cloud Connectivity Data Analytics Requirements

**#Hint:** All features must consider opportunity for prognostics using cloud connectivity and data analytics. Use the Feature Data Analytics Creation Tool to identify the list of data elements that could help with the following:

* Confirm customer usage of the feature
* Early identification of feature failure modes and causes
* Data elements that help with feature reductive design

**#Link:** Feature Data Analytics Creation Tool (work in progress, no link available yet).

### After Sales Requirements

**#Hint:** Requirements in this section could specify, e.g. input for the Owner’s Manual could be gathered.

### Process requirements

**#Hint:** Requirements in this section are relevant for the development process of the feature, e.g. ISO26262 compliance.

# Functional Safety

**#Classification**: Functional Safety only

**#Hint:** This section is dedicated to the Ford Functional Safety (ISO26262) process. For details of this process refer **#Link:** [Ford Functional Safety Sharepoint](https://pd3.spt.ford.com/sites/GlobalFunctionalSafety/Pages/default.aspx)

**#Contact:** [*RE Wiki Roles & Responsibilites page – Role: Application Functional Safety Engineer*](http://wiki.ford.com/display/RequirementsEngineering/Default+Contacts+for+Stakeholder+Roles#ApplicationFunctionalSafetyEngineer)

## System Behaviors for HARA

**#Classification**: Functional Safety only

**#Hint:** List of selected system behaviors is an input to the Hazard Analysis and Risk Assessment (HARA). In the table below, list the system behaviors (i.e., the implementation-independent, intended functions of the item at the vehicle level). Include the identifier, name and description of each system behavior. All system behaviors shall be evaluated in the HARA.

|  |  |  |
| --- | --- | --- |
| ID | Name | Description |
| **F\_ATC\_U0002** | Tilt the vehicle body | Tilt the vehicle body |

Table 15: System Behaviors for HARA

## Safety Assumptions

**#Hint:** Copy the assumptions from the document "FFSD 02 Hazard Analysis and Risk Assessment”, Tab. “2 - Assumptions” with “Ref/ID”, “Name”, “Category”, “Description”, “Purpose”. In this document, additionally a reference to the requirement ID is inserted.

**#Link:** [Functional Safety Sharepoint](https://pd3.spt.ford.com/sites/GlobalFunctionalSafety/Pages/default.aspx) – HARA

|  |  |  |
| --- | --- | --- |
| ID | Assumption | |
| **1** | **Name** |  |
| **Description** |  |
| **Purpose** |  |
| **Category** |  |
| **Related Requirements IDs** |  |
| **2** | **Name** |  |
| **Description** |  |
| **Purpose** |  |
| **Category** |  |
| **Related Requirements IDs** |  |

Table 16: Functional Safety Assumptions

## Safety Goals

**#Classification**: Functional Safety only

**#Hint:** The list of Functional Safety Goals is an output of the Hazard Analysis and Risk Assessment (HARA) and therefore not required during the initial creation of the Feature Document.

**#Link:** [Functional Safety Sharepoint](https://pd3.spt.ford.com/sites/GlobalFunctionalSafety/Pages/default.aspx) – HARA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ID | Goal | | | |
| **1** | **Goal Name** |  | | |
| **Description** |  | | |
| **Safety Goal Concept** | <fill in Safety Goal Concept incl. the Warning & Recovery Concept and also the Safe Statel> | | |
| **ASIL** |  | **FTTI** | <fill in Fault Tolerant Time Interval (if applicable)> |
| **Related FSR IDs** |  | | |
| **2** | **Goal Name** |  | | |
| **Description** |  | | |
| **Safety Goal Concept** | <fill in Safety Goal Concept incl. the Warning & Recovery Concept and also the Safe State> | | |
| **ASIL** |  | **FTTI** | <fill in Fault Tolerant Time Interval (if applicable)> |
| **Related FSR IDs** |  | | |

Table 17: Functional Safety Goals

## Functional Safety Requirements

**#Classification**: Functional Safety only

**#Hint:** The section lists the Functional Safety Requirements (FSRs) derived from

* a Safety Goal (list in subsections “<Goal 1 Name>” and following)   
  in this case each FSR should trace back to a safety goal in ch. “Safety Goals”
* and Assumptions (list in subsection “Derivation of Functional Safety Requirements on Assumptions”).   
  in this case each FSR should trace back to an assumption in ch. “Safety Assumptions”.

In section “ASIL Decomposition” the initial FSRs from chapters “<Goal 1 Name>” to “Derivation of Functional Safety Requirements on Assumptions” may be decomposed, if required.

**#Macro:** [Add Ins -> Add Requirement macro](http://wiki.ford.com/pages/viewpage.action?pageId=174654231) (select “**Func./Tech. Safety Requirement**” as type)

**#Link:**

* [*Functional Safety Sharepoint*](https://pd3.spt.ford.com/sites/GlobalFunctionalSafety/Pages/default.aspx) – Functional Safety Concept
* [*RE Wiki - Requirements Attributes*](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes)

### <Goal 1 Name>

### <Goal n Name>

### Derivation of Functional Safety Requirements on Assumptions

**#Classification:** Functional Safety only

**#Hint:** Derive FSRs from the Assumptions (refer to section “Safety Assumptions”

### ASIL Decomposition of Functional Safety Requirements

***#Classification:*** *Functional Safety Only*

***#Hint:*** *For ASIL D features additional measures like a requirements decomposition might be required. Fill out the following table for each ASIL D decomposition applied in the feature.*

*The decomposed FSRs should be listed beneath each table and referenced inside the table by ID and Title*

**#Macro:** [Add Ins -> Add Requirement macro](http://wiki.ford.com/display/RequirementsEngineering/Adding+a+Requirement) (select “**Func./Tech. Safety Requirement**” as type)

***#Link:***[*Functional Safety Sharepoint*](https://pd3.spt.ford.com/sites/GlobalFunctionalSafety/Pages/default.aspx) *- Functional Safety Concept*

| **Input FSR** | <Give the ID of a FSR from sections above which shall be decomposed> | |
| --- | --- | --- |
| **Decomposition Rationale** | <Give a reason why the decomposition was performed> | |
| **Method for Decomposition** | Choose a Method | |
| **FSR 1 after Decomposition** | **FSR ID** | <Give the ID of the decomposed FSR> |
| **FSR Title** | <Give the title of the decomposed FSR> |
| **ASIL** |  |
| **Rationale** | <Give a reason and thought behind that particular requirement. Should include how the requirement is able to independently fulfill the needs of the parent requirement> |
| **Satisfied by** | <Logical Function/Signal from Functional Architecture in chapter 8.1 ”Functional Architecture”. This element shall be independent of the element satisfied by the other half of the ASIL decomposition.> |
| **FSR 2 after Decomposition** | **FSR ID** | <Give the ID of the decomposed FSR> |
| **FSR Title** | <Give the title of the decomposed FSR> |
| **ASIL** |  |
| **Rationale** | <Give a reason and thought behind that particular requirement. Should include how the requirement is able to independently fulfill the needs of the parent requirement> |
| **Satisfied by** | <Logical Function/Signal from Functional Architecture in chapter 8.1 ”Functional Architecture”. This element shall be independent of the element satisfied by the other half of the ASIL decomposition.> |
| **FSR for Independence**  *Note: should consider commonly used input, output and processing*  *Note: additional row should be added if additional* *requirements for Independence are necessary* | **F-S-Req.-ID** |  |
| **F-S-Req. Title** |  |
| **ASIL** |  |
| **Rationale** |  |

# CyberSecurity

**#Classification**: Cybersecurity only – Otherwise remove substructure and state “not applicable”.

## Security Goals

**#Classification**: Cybersecurity only

**#Hint:** The list of Cybersecurity Goals are an output of the Threat Model. The CAL attribute is not used yet.

**#Link:** [Alignment with Cybersecurity](http://wiki.ford.com/display/RequirementsEngineering/Alignment+with+Cybersecurity) – RE Wiki

|  |  |  |
| --- | --- | --- |
| ID | Goal | |
|  | **Goal Name** |  |
| **Description** |  |
| **CAL** |  |
| **Related CSR IDs** |  |
|  | **Goal Name** |  |
| **Description** |  |
| **CAL** |  |
| **Related CSR IDs** |  |
|  | **Goal Name** |  |
| **Description** |  |
| **CAL** |  |
| **Related CSR IDs** |  |

Table 18: Cybersecurity Goals

## Cybersecurity Requirements

**#Classification**: Cybersecurity only

**#Hint:** Cybersecurity requirements derived from the Cybersecurity Goals. Those requirements should be granular enough to be satisfied by a single Logical Function in the Functional Architecture.

**#Link:** [Alignment with Cybersecurity](http://wiki.ford.com/display/RequirementsEngineering/Alignment+with+Cybersecurity) – RE Wiki

**#Macro:** [Add Ins -> Add Requirement macro](http://wiki.ford.com/display/RequirementsEngineering/Adding+a+Requirement) (select “**Requirement**” as type)

# Open Concerns

**#Hint:** The following list presents open concerns, which have to be discussed or clarified over the course of the on-going requirements engineering.

| ID | Concern Description | e-Tracker / Reference | Responsible | Status | Solution |
| --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |
| 8 |  |  |  |  |  |
| 9 |  |  |  |  |  |

Table 22: Open Concerns

# Revision History

| Revision | Date | Description | Approved by | Responsible |
| --- | --- | --- | --- | --- |
| A |  | Initial version |  | Jbaden1 |
| 0.4 | 3/14 | Update “###UC\_F\_Relax\_00013### User can modify the relax position through the relax settings. |  | Calvin |
| 0.4 | 5/9 | 4.2.3.1 update pre-condition of running themes |  | Calvin |
| 0.5 | 5/11 | Add can signal : PwPckTqRdy\_B\_Dsply |  | Calvin |

## Template Revisions

*#Important: Do not change this section*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version | Rev. | Date | Description | Responsible |
| 0 | 6 | 2015-05-26 | * Chapter “Feature Overview” and made a 2nd level heading. * Chapter “Feature Modeling” divided into 3 subchapter (“Scenarios”, “Use Cases”, “State Machines”) for different modeling methods | Jbaden1 |
| 0 | 7 | 2015-05-27 | * Table of Content updated * Template Revision History chapter added | Jbaden1 |
| 0 | 8 | 2015-07-02 | * Section “Unsettled Issues” added | Alevin7 |
| 0 | 9 | 2015-08-04 | * Section “Feature Variants” added * Section “Feature Boundary Diagram” renamed to “Feature Context Diagram” * Document Properties adapted to match needs of VBA macros | Jbaden1, Awegman1 |
| 1 | 0 | 2015-09-11 | * Section “Feature Variants” reworked * Feature Goals removed. Only “Safety Goals“ chapter remains. * Heading 2 formatting issues corrected. * Requirements / Use Cases Listing removed from traceability chapter. * Formatting of attribute table in Notation chapter corrected * Open Topics / Known Issues chapter moved to the end | Jbaden1 |
| 1 | 1 | 2015-11-16 | * Table-Styles removed (for smooth VSEM import) * Some clean-up of sections “Purpose” and “Audience” | Awegman1, jbaden1 |
| 1 | 2 | 2016-02-26 | * Minor corrections based on lessons learned from CC and PCL pilot (e.g. section market/regions) and discussion with Functional Safety Team (purpose of feature) * Footer corrected * Boundary diagram interface chapter renamed to influences. | Jbaden1 |
| 1 | 3 | 2016-02-26 | * Minor corrections after review with Whitney Keith from Functional Safety team | Jbaden1 |
| 1 | 4 | 2016-03-10 | * Some cleanup of meta-data in Word Properties | Jbaden1 |
| 1 | 5 | 2016-03-10 | * Footer formatting corrected (Issue 19) * Results from review with Functional Safety Team incorporated (Issue 20). | jbaden1 |
| 1 | 6 | 2016-04-18 | * Scenario Template added | Jbaden1 |
| 1 | 7 | 2016-04-18 | * Chapter “Operation Modes and States” moved before “Use Case” section. | Jbaden1 |
| 1 | 8 | 2016-04-18 | * Broken Wiki links repaired. | Jbaden1 |
| 2 | 0 | 2016-05-19 | * Adapted to Specification\_Macros.dotm V2.0 * Requirements Templates chapter (ch. 1.7.1) no longer has an attribute table, but refers directly to the Wiki.. | Jbaden1 |
| 2 | 1 | 2016-06-10 | * Table for Context Diagram modified (lists external entities and Influence Description only) | Jbaden1 |
| 2 | 2 | 2016-07-08 | * Template version added to footer * Several hints added to the various sections * Findings from Functional Safety Team incorporated. * RE\_SafetyRequirement style added | Jbaden1 |
| 2 | 3 | 2016-09-21 | * Update from Functional Safety Team incorporated (“Lessons Learned”, “System Behaviors for HARA”) | Jbaden1 |
| 2 | 4 | 2016-11-15 | * Update from Functional Safety Team incorporated (“Lessons Learned”, “System Behaviors for HARA”) * Explanatory notes made more formal | Jbaden1 |
| 3 |  |  | Skipped to synchronize with Specification\_Macros.dotm |  |
| 4 |  |
| 5 | 0 | 2017-01-13 | * Meta data updated for specification macros, version 3.1 * SW Unit chapter removed for the time being * Green boxes added for user hints | Jbaden1 |
| 5 | 1 | 2017-01-18 | * Minor editorial changes | Jbaden1 |
| 6 | 0 | 2017-02-03 | * CR48: Chapter 6 renamed from “Safety” to “Functional Safety”. New sub-chapter “Safety” introduced in Non-Functional Requirements section | Jbaden1 |
| 6 | 0 | 2017-04-28 | * CR7: “RequirementsTraceability” chapter removed | Jbaden1 |
| 6 | 0 | 2017-11-15 | * CR32/53: New Cover Sheet + Disclaimer replaces FAP-150 like ones. * CR75: Some rewording -> Terminology to Glossary, Notation -> Document Conventions * CR49: Rename “Assumptions & Constraints” to “Assumptions” * CR74: Safety Assumptions added to chapter 6. * CR58: Add function allocation column to Logical Architecture chapter | Jbaden1 |
| 6 | 0 | 2018-01-31 | * CR63: Updated links to Functional Safety Sharepoint | Jbaden1 |
| 6 | 0 | 2018-07-24 | * CR69: Add FSR to FeatureDoc * CR64: Add new section "Design Requirements" to Function Spec and Feature Spec | Jbaden1 |
| 6 | 0 | 2018-08-06 | * CR53: some corrections for metada and formatting | Jbaden1 |
| 6 | 0 | 2018-09-28 | * Broken links to RE Wiki repaired | Jbaden1 |
| 6 | 0 | 2018-10-31 | * Cover sheet and footer more GIS like. Functional Safety team feedback incorporated:   + New subsections “Functional Safety Requirements, (Decomposed) FSRs and Parameters / Values   + Removal of “Logical Architecture” | Jbaden1 |
| 6 | 0 | 2018-12-12 | * FSR template removed, now as a macro in the Specification\_Macros.dotm | Jbaden1 |
| 6 | 0a | 2019-05-23 | * Re-introduce “Logical Architecture” (for Functional Safety) | Jbaden1 |
| 6 | 0b | 2019-06-26 | * Chapter “Logical Elements” in “Logical Architecture” section added (FuSa CR 15136240) | Jbaden1 |
| 6 | 0c | 2019-03-22 | * Chapter “Decomposed FSRs” renamed to “ASIL Decomposition of Functional Safety Requirements” and moved beneath Chapter “Functional Safety Requirements”. Explanatory text improved. | Jbaden1 |
| 6 | 0c | 2019-04-05 | * Some wording in ASIL decomposition table modified. Description of fields in that table improved. | Jbaden1 |
| 6 | 0c | 2019-06-24 | * “Input Requirements” section modified (table approach as for the other RE templates). * “References” and “Glossary” chapter moved to the “Introduction” chapter. | Jbaden1 |
| 6 | 0c | 2019-07-02 | * "Important" box added on cover sheet which points to the macros | Jbaden1 |
| 6 | 0c | 2019-07-02 | * Subsection “Error Handling” removed form chapter “Feature Requirements”->”Functional Requirements” (teams are free to create their own substructure of that section). Note tells author not to forget about error handling. * Hint for chapter “Feature Variants” improved reworded upon request from Functional Safety Team. | Jbaden1 |
| 6 | 0c | 2019-05-11 | * Copyright notice shortened and moved to cover sheet and added to footer (to be compliant [with Ford copyright guidelines](http://www.fgti.ford.com/client/NewFGTI/CopyrightNotice.html)) * Term “Disclaimer” no longer used for what is actually only a copyright notice | Jbaden1 |
| 6 | 0c | 2019-22-11 | * Chapter “Input Requirements/Documentst: minor modifications (examples added), Word comment removed” | Jbaden1 |
| 6 | 0c | 2019-12-05 | * Upstream Documents section added to “Input Requirements/Documents” table * Custom style table formatting removed * Hint on system behaviors modified as requested from FuSa team | Jbaden1 |
| 6 | 0c | 2019-12-09 | * Term “Upstream Documents” replaced by “Attribute Requirements” in “Input Requirements/Documents” table * ASIL Decomposition table replaced by a version, which get not corrupted during VSEM import. | Jbaden1 |
| 6 | 0c | 2019-12-10 | * In ch. “Functional Safety Requirements” Word reference Id by Word reference text replaced.. | Jbaden1 |
| 6 | 1a | 2020-02-12 | * New chapter “Cybersecurity” added. | Jbaden1 |
| 6 | 1a | 2020-03-03 | * All User Hints formatted using style “RE\_UserHint” to enable automatic removal by a macro. | Jbaden1 |
| 6 | 1a | 2020-03-04 | * Chapter “Cloud Connectivity Data Analytics Requirements” added upon request by D. Crockett/J. Rawlings | Jbaden1 |
| 6 | 1a | 2020-03-09 | * Missing doc property “LatestSigMappingID” and “LatestAisInterfaceID” added * doc property “CopyrightDate” re-formatted to text and copyright date field in footer corrected * Version numbering re-initialized as 0.1 * Init value of version/revision date set to “yyyy/mm/dd” instead of “yyyy-mm-dd” to be in line with the “Edit Document Property” dialog * type of document property for latest IDs changed to number instead of text | Jbaden1 |

# Appendix

Document ends here.