Feature Document (FD)

Rear Fog Light

<<Feature>>
(F001010)

Document Type	**Feature Document (FD)**		
Template Version	**6.0 / FFSD7.1**		
SysML Report Template Version	**N (4/18/2019)**		
Document ID	**feature_doc_rearfoglight**		
Document Location			
Document Owner	**Lars Bernhard (LBERNHA2)**		
Document Revision	**FD0**		
Document Status	**Draft**		
Date Issued	**2019-06-13**		
Date Revised	**2019-06-13**		
Document Classification	GIS1 Item Number:	**27.60/35**	
	GIS2 Classification:	**Confidential**	

Document Approval			
Person	Role	Email Confirmation	Date

Auto-Generated by MagicDraw
Printed Copies Are Uncontrolled

DISCLAIMER

This document contains Ford Motor Company Confidential information. Disclosure of the information contained in any portion of this document is not permitted without the expressed, written consent of a duly authorized representative of Ford Motor Company, Dearborn, Michigan, U.S.A.

CONTENTS

List of Figures

List of Tables

1 INTRODUCTION

1.1 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. For details on the Ford Functional Safety (ISO26262) process refer to the Ford Functional Safety Sharepoint.

1.2 Document Scope

This Feature Document (FD) specifies the following features:

Feature ID	Feature Name	Owner	Reference
F001010	Rear Fog Light (Program(s): Core)	Lars Bernhard (LBERNHA2)	

Table 1: Features described in this FD

1.3 Document Audience

The FD is written by the feature owner of Lars Bernhard (LBERNHA2). 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.*

1.3.1 Stakeholder List

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

*#**Hint:** Refer to Ford RE Wiki – Stakeholder List 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.*

1.4 Document Organization

1.4.1 Document Context

Refer to the Specification Structure page in the Ford RE Wiki to understand how the FD relates to other Ford Requirements Documents and Specifications.

1.4.2 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".*

1.5 Document Conventions

1.5.1 Requirements Templates

Each requirement, use case or scenario in this specification shall follow the corresponding template given in the document template *Specification_Macros.dotm* at RE Wiki - Specification Templates.

1.5.1.1 Identification of requirements

1.5.1.2 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.

2 FEATURE OVERVIEW

2.1 Purpose and Description of Feature

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

Rear Fog lights are provided to give additional lighting to the rear of the vehicle and are only to be used in conditions of severely reduced visibility. They consist of either one (mounted on the centerline or driver's side of the vehicle) or two high intensity red lamps, to improve visibility of the vehicle to drivers approaching from the rear. Rear Fog Lighting feature is meant for European applications only, for North America this feature is disabled.

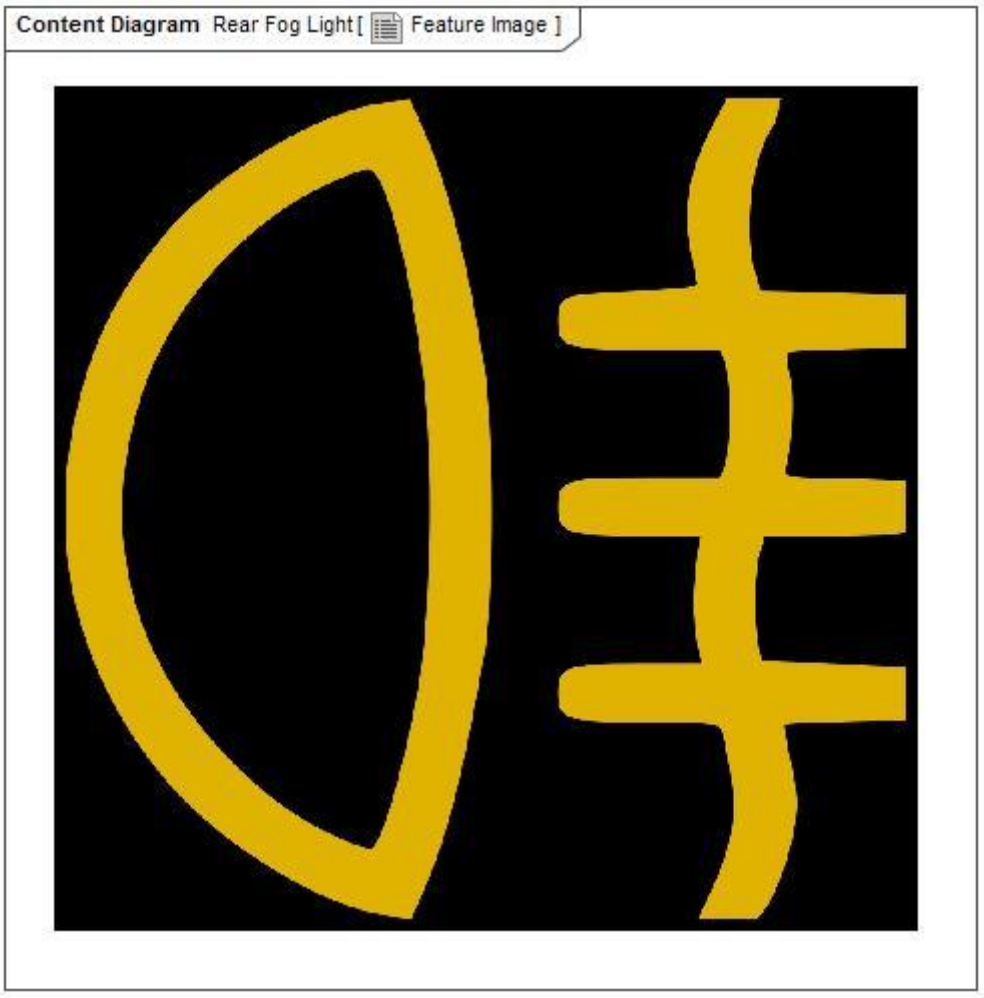


Figure 1: Feature Image

2.2 Feature Variants

*#**Hint:** Definitions for different variants of the feature (if applicable). Give each variant a descriptive name by which it can be referenced further on in the document. If no variant exists, state "No Feature Variants".*
The Variant Description should give a short informative text which describes the variants of the feature.

Variant Name	Variant Description	Remarks
Rear Fog Lamps both sided	Rear Fog Lamp on both side of the vehicles rear lighting.	
Rear Fog Lamps one sided	Rear Fog Lamp only on one side of the vehicles rear lighting.	

Rear Fog with Trailer	In the case a trailer is connected to the vehicle, the rear fog lamp on the trailer is illuminated, but the rear fog lamp on the vehicle is deactivated when Rear Fog Light is selected. This is required for European applications and allowed by ECE regulations. For Brazil, both, vehicle and trailer rear fog lamps must be illuminated.	

Table 2: Feature Variants

2.2.1 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
Rear Fog Lamps both sided	No	Optional	Mandatory	Optional	Optional	Mandatory
Rear Fog Lamps one sided	No	Optional	Mandatory	Optional	Optional	Mandatory
Rear Fog with Trailer	No	Mandatory	No	No	No	No

Table 3: Regions & Markets

2.3 Input Requirements

*#**Hint:** List all input requirements, which are relevant for the feature. Typically, attribute requirements, legal requirements as well as national and international standards have to be considered.*

2.3.1 Legal Requirements

- : Compliance with ECE R38
  - The Feature shall be compliant with ECE R38
- : Compliance with ECE R48
  - The Feature shall be compliant with ECE R48.
- : Compliance with ECE R121
  - The Feature shall be compliant with ECE R121.
- : Compliance with GB 11554-2008
  - For China: The Feature shall be compliant with GB 11554-2008

2.3.2 Trustmark Requirements

No Trustmark Requirements specified.

2.3.3 Industry Standards

- : ISO 26262
  - The system should be developed according to Ford's implementation of Functional Safety.

2.3.4 Attribute Requirements

- : Improve visibility
  - The Rear Fog Light shall provide additional lighting to the vehicle in conditions of severely reduced visibility, to improve visibility of the vehicle to drivers approaching from the rear

2.4 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*

No lessons learned specified.

2.5 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 discarded 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"*

Rear Fog Light operational

This assumption defines that the actual feature function is operational

Purpose

Rear Fog Light Intermittent (de-)activation above 0,5 Hz

The intermittent De-/activation of the Rear Fog Light or its tell tale is above 0,5 Hz

Purpose

Driver has not yet understood inverted logic

This assumes that the driver has not yet walked out the car/ asked other passangers to validate that the logic of the rear fog light switch is inverted

Purpose

2.6 References

2.6.1 Ford Documents

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

Reference	Title	Doc. ID	Document Location	Revision

Table 4: Ford internal Documents *(not specified in SysML model)*

2.6.2 External Documents and Publications

The list of external documents could include books, reports and online sources.
*#**Hint:** You may refer to IEEE Citation Reference on how to format a reference.*

Reference	Document / Publication	Document Location

Table 5: External documents and publications *(not specified in SysML model)*

2.7 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

See Appendix for Definitions and Abbreviations.

2.7.1 Parameters / Values

Name	Description	Range / Resolution

Table 6: Parameters / Values used in this document *(Not supported by MagicDraw report generation)*

3 FEATURE CONTEXT

3.1 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*

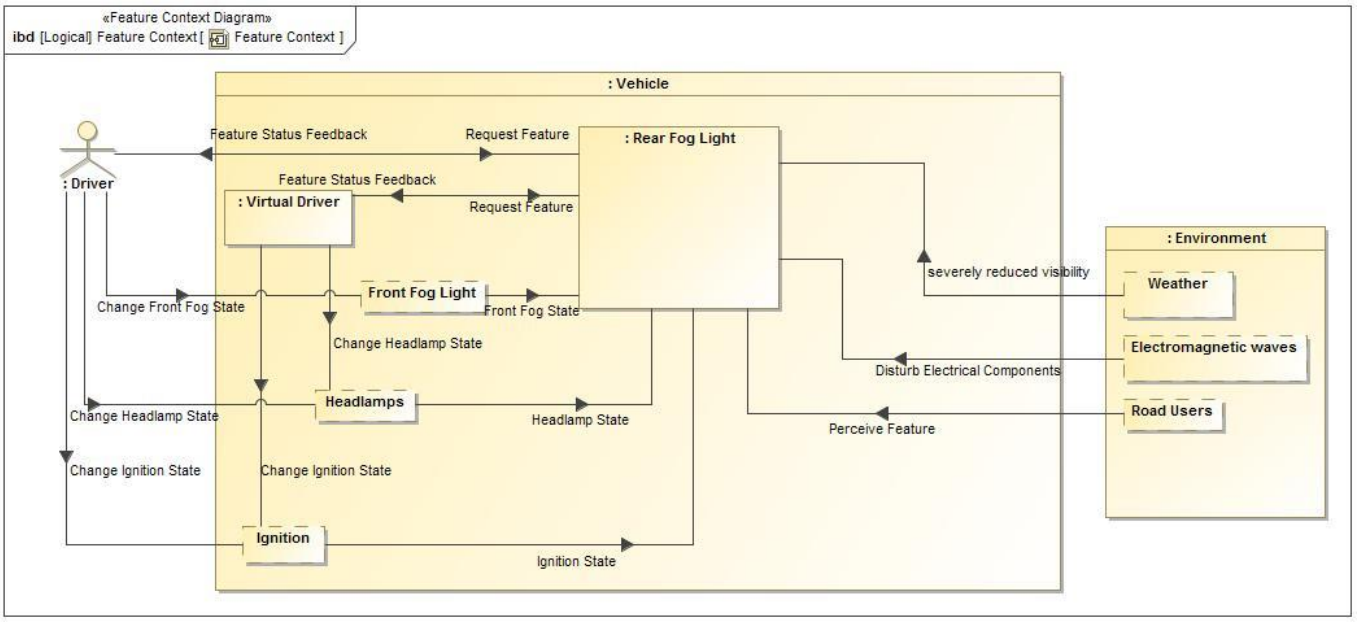


Figure 2: Feature Context

3.2 List of Influences

ID	External Entity	Influence Description
Change Front Fog State	Feature Context To Vehicle	The Driver can change the feature status.
	Virtual Driver To Vehicle	The Driver can change the feature status.
Change Headlamp State	Feature Context To Vehicle	The actors can change the headlamps operation state.
	Virtual Driver To Vehicle	The actors can change the headlamps operation state.
Change Ignition State	Feature Context To Vehicle	The actors can change the ignition state.
	Virtual Driver To Vehicle	The actors can change the ignition state.
Disturb Electrical Components	Environment To Rear Fog Light	Electromagnetic waves may cause LEDs to flicker.
Feature Status Feedback	Rear Fog Light To Feature Context	A Telltale is mandatory to indicate the features activation state to the human driver.
	Rear Fog Light To Virtual Driver	A Telltale is mandatory to indicate the features activation state to the human driver.
Front Fog State	Vehicle To Rear Fog Light	Status of the Front Fog Lamps.
Headlamp State	Vehicle To Rear Fog Light	Status of the Headlamps.
Ignition State	Vehicle To Rear Fog Light	Status of the vehicles ignition.

Perceive Feature	Environment To Rear Fog Light	The Feature is perceivable by the environment.
Request Feature	Feature Context To Rear Fog Light	The VDS may request the feature.
	Virtual Driver To Rear Fog Light	The VDS may request the feature.
severely reduced visibility	Environment To Rear Fog Light	The use of the feature is only allowed under conditions of severely reduced visibility.

Table 7: List of Influences

4 FEATURE MODELING

4.1 Operation Modes and States

*#**Classification:** Optional (Mandatory for Functional Safety)*
*#**Link:** RE Wiki – State Charts*
*#**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.*

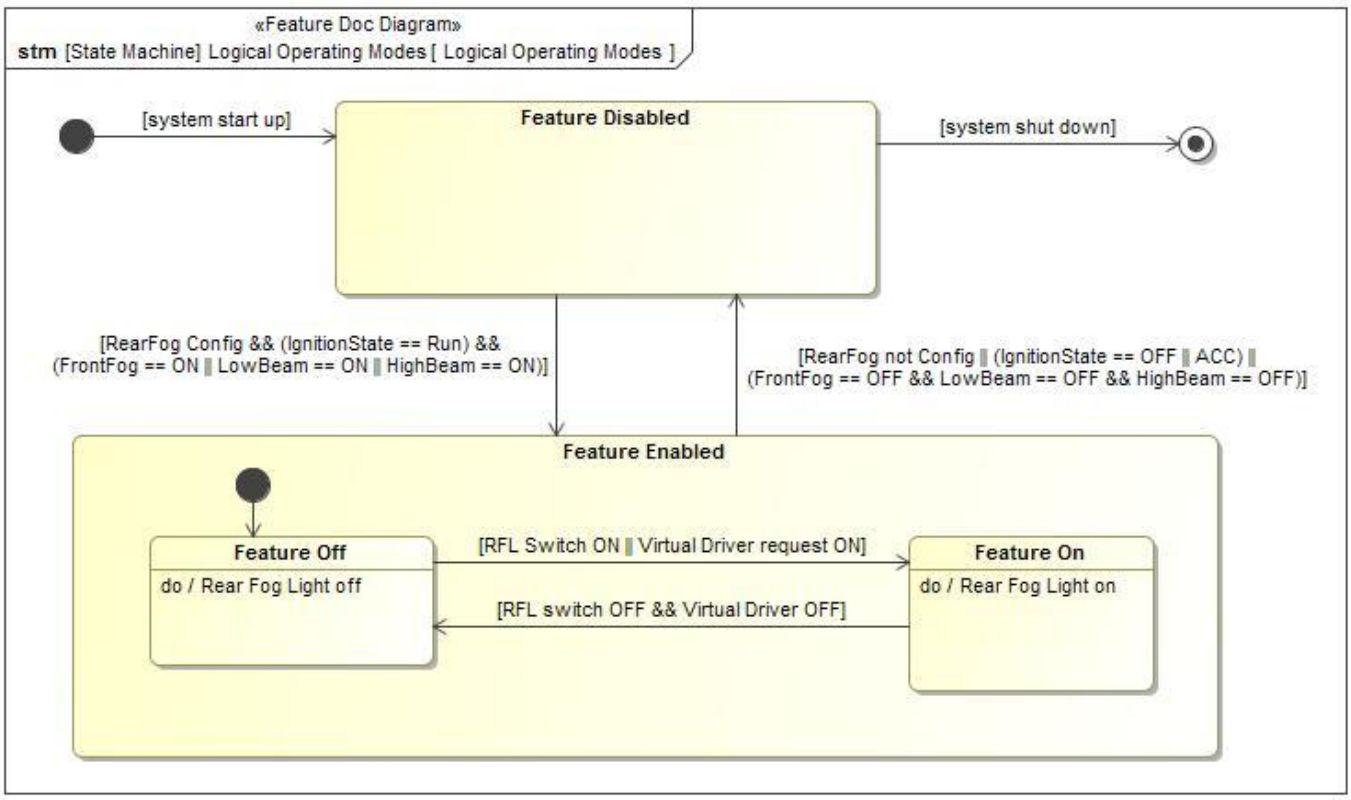


Figure 3: Logical Operating Modes

State	Description	Requirements Reference (optional)
Feature Disabled	The Feature is disabled, while the enabling conditions are not met.	
Feature Enabled	The features enabling conditions were met and the Feature can be operated.	
Feature Off	The Feature is in "Off" State and can be turned on by user request. Do behavior: Rear Fog Light off	
Feature On	The Feature is in "On" state and can be switched off by user request. Do behavior: Rear Fog Light on	

Table 8: Operation Modes and States on Logical Operating Modes

Transition ID	Description	Requirements Reference (optional)
T1	Name: Shut Down Guard: =system shut down	
T2	Guard: RFL Switch ON || Virtual Driver request ON	

T3	Name: Initialisation Guard: =system start up	
T4	Guard: =RearFog Config && (IgnitionState == Run) …	
T5		
T6	Guard: RearFog not Config || (IgnitionState == OFF || ACC…	
T7	Guard: RFL switch OFF && Virtual Driver OFF	

Table 9: Transitions between Operation Modes and States on Logical Operating Modes

4.2 Use Cases

*#**Classification:** Optional*
*#**Link:** RE Wiki – Use Cases*

4.2.1 Use Case Diagram

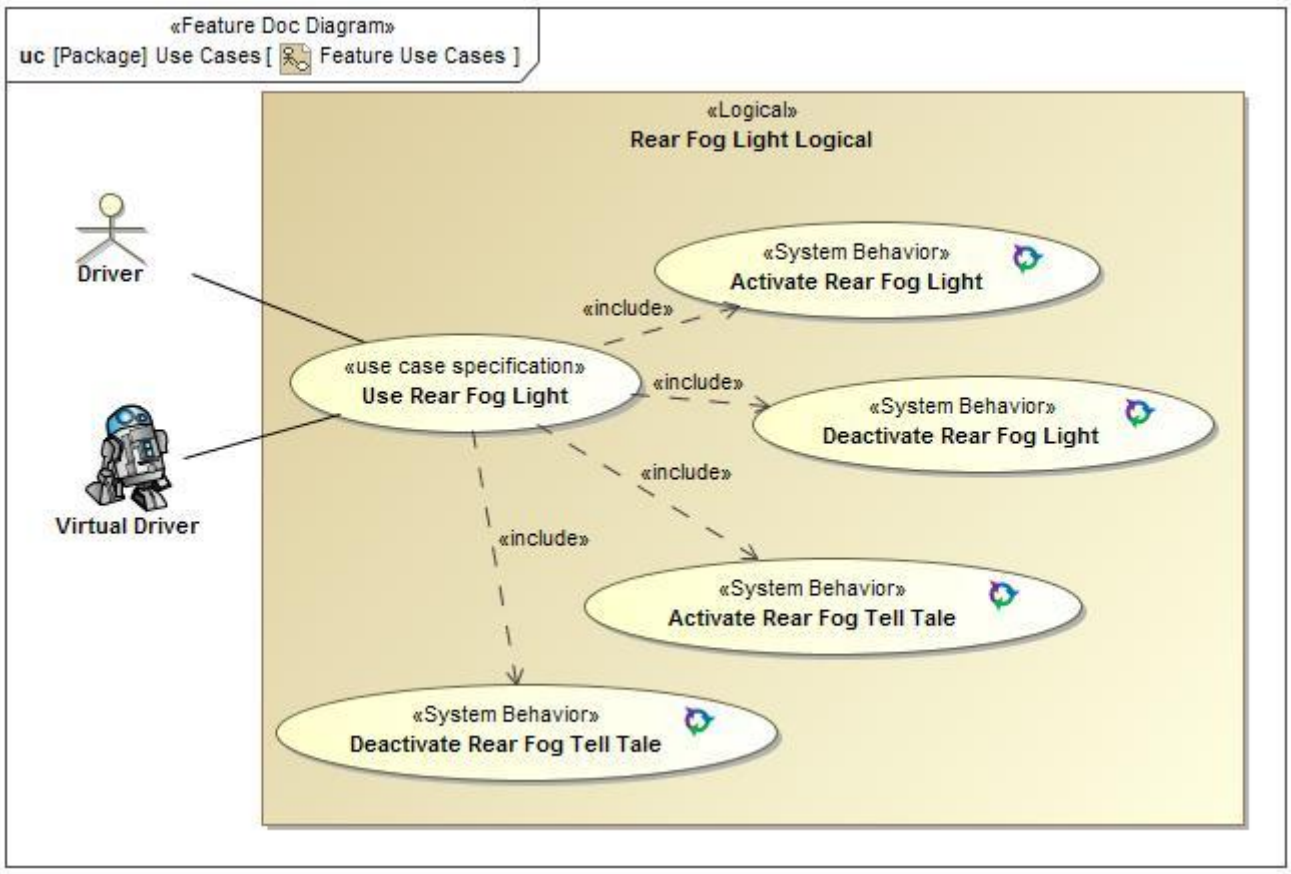


Figure 4: Feature Use Cases

4.2.2 Actors

Actor	Description
Driver	Human Driver of the Vehicle.
Virtual Driver	Synonym for the autonomous vehicle control algorithm.

Table 10: List of Actors

4.2.3 Use Case Descriptions

*#**Classification:** Optional*

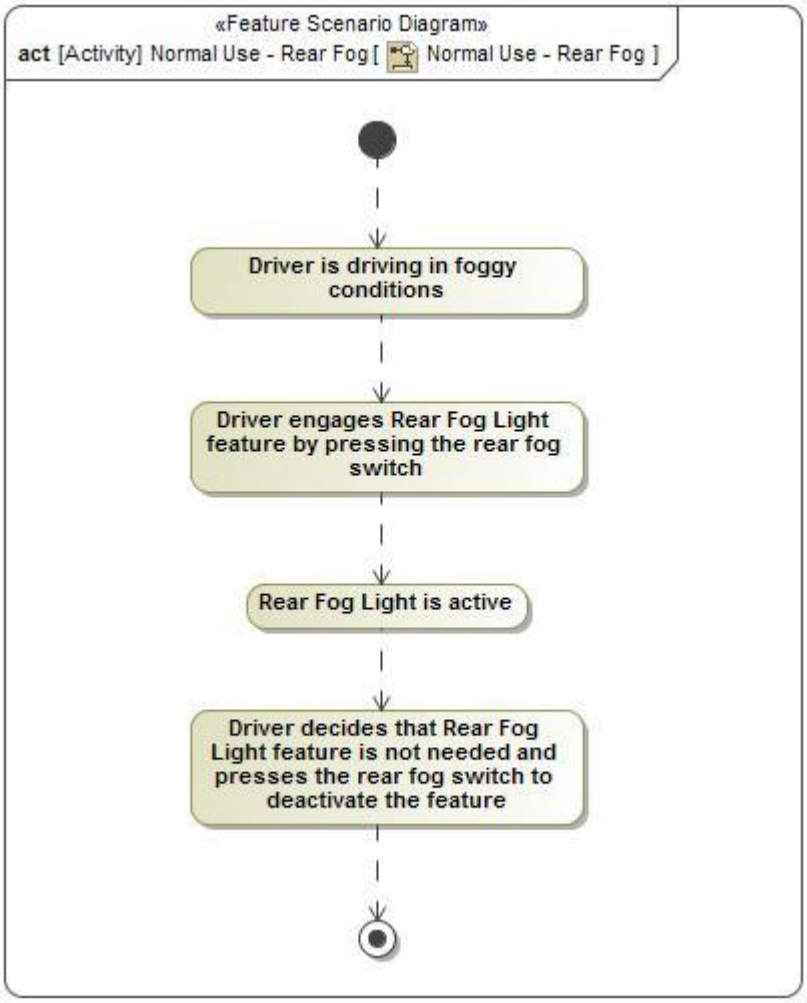
Use Rear Fog Light

Actors		Driver
		Virtual Driver
Subject		Rear Fog Light Logical
Description		
Preconditions	PreC1	For autonomous use: Virtual Driver installed
	PreC2	Rear Fog Light installed
	PreC3	Rear Fog telltale installed
Main Flow	M1	Actor sets Ignition to RUN
	M2	Actor sets Headlights to LOW or HIGH BEAM on
	M3	Actor requests Rear Fog Light
	M4	Rear Fog Light light source and Rear Fog Light telltale are ON
	M5	Actor requests Rear Fog Light OFF or Headlights OFF or Ignition ACC/OFF
	M6	Rear Fog Light light source and Rear Fog Light telltale are OFF
Alternative Flow Steps	A1	Actor sets Ignition to RUN
	A2	Preconditions for Front Fog Light are fullfilled und Front Fog is ON
	A3	Actor requests Rear Fog Light
	A4	Rear Fog Light light source and Rear Fog Light telltale are ON
	A5	Actor requests Rear Fog Light OFF or Front Fog is OFF or Ignition is ACC/OFF
	A6	Rear Fog Light light source and Rear Fog Light telltale are OFF

4.3 Driving and Operation Scenarios

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

Normal Use - Rear Fog



Flow of Actions	
1	Driver is driving in foggy conditions
2	Driver engages Rear Fog Light feature by pressing the rear fog switch
3	Rear Fog Light is active
4	Driver decides that Rear Fog Light feature is not needed and presses the rear fog switch to deactivate the feature

5 FEATURE REQUIREMENTS

*#**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.*

5.1 Functional Requirements

RFL enabling ignition state

The Rear Fog Light feature shall be enabled in ignition state RUN only.

Requirement ID:					
Rationale					
Acceptance Criteria					
Notes					
Source				**Owner**	
Source Req.				**V&V Method**	
Type	Functional	**Priority**	1 - High	**Status**	

Req. Template Version 6.0 End of Requirement

RFL enabled with Front Fog

The Rear Fog Light feature shall be activated by user only when Front Fog Light is switched on.

Requirement ID:					
Rationale					
Acceptance Criteria					
Notes					
Source				**Owner**	
Source Req.				**V&V Method**	
Type	Functional	**Priority**	1 - High	**Status**	

Req. Template Version 6.0 End of Requirement

RFL enabled with Low beam / High Beam

The Rear Fog Light feature shall be activated by user when Low beam or High beam are switched on.

Requirement ID:					
Rationale					
Acceptance Criteria					
Notes					
Source	ECE R48 6.11.7.			**Owner**	
Source Req.	• Compliance with ECE R48			**V&V Method**	
Type	Functional	**Priority**	1 - High	**Status**	

Req. Template Version 6.0 End of Requirement

RFL configurable

The RFL Feature shall be configurable via parameter.

Requirement ID:					
Rationale					
Acceptance Criteria					
Notes					
Source	ECE R48, FMVSS 108 (no rear Fog)			**Owner**	
Source Req.	• Compliance with ECE R48			**V&V Method**	
Type	Functional	**Priority**	1 - High	**Status**	

Req. Template Version 6.0 End of Requirement

RFL with Trailer

It shall be configurable, if in case a Trailer is attached to the vehicle, both RFL's (Trailer and Vehicle) are activated or only the Trailers RFL is activated.

Requirement ID:

Rationale	Allowed by ECE Regulations to just switch the Trailers RFL on. Demanded by Brazilian Regulations, that both RFLs have to be illuminated.				
Acceptance Criteria					
Notes					
Source	ECE R48 6.11.7.5			**Owner**	
Source Req.	• Compliance with ECE R48			**V&V Method**	
Type	Functional	**Priority**	1 - High	**Status**	

Req. Template Version 6.0 End of Requirement

5.1.1 Error Handling

No Error Handling Requirements specified.

5.2 Non-Functional Requirements

*#**Hint:** Non-functional requirements specify some performance criteria in addition to the functional behavior given defined by the functional requirements. Timing (if not already included in the functional requirements), security details (e.g. how secure does an algorithm have to be) reliability (e.g. mean time between failure) or maintainability could be specified in this section.*

5.2.1 Security

No Security Requirements specified.

5.2.2 Reliability

RFL (LED) functionality for vehicle lifetime

The Rear Fog Light feature (LED use) shall meet the vehicle livetime requirement of 10 year and/ or 150,000 miles (240.000 km)

Requirement ID:

Rationale					
Acceptance Criteria					
Notes					
Source	SDS EXTLGT			**Owner**	
Source Req.				**V&V Method**	
Type	Reliability	**Priority**	1 - High	**Status**	

Req. Template Version 6.0 End of Requirement

5.3 HMI Requirements

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

Rear Fog Light Telltale HMI

The Feature shall have a Telltale, with a symbol according to ECE R121 regulations.

Requirement ID:

Rationale					
Acceptance Criteria					
Notes					
Source	ECE R48 6.11.8 ;ECE R121			**Owner**	
Source Req.	• Compliance with ECE R121 • Compliance with ECE R48			**V&V Method**	
Type	HMI	**Priority**	1 - High	**Status**	

Req. Template Version 6.0 End of Requirement

Rear Fog Light Switch HMI

There shall be a HMI switch to activate and deactivate the Feature.

Requirement ID:

Rationale					
Acceptance Criteria					
Notes					
Source				**Owner**	
Source Req.				**V&V Method**	
Type	HMI	**Priority**	1 - High	**Status**	

Req. Template Version 6.0 End of Requirement

5.4 Other Requirements

5.4.1 Manufacturing Requirements

No Manufacturing Requirements specified.

5.4.2 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).*

No Service Requirements specified.

5.4.3 After Sales Requirements

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

No After Sales Requirements specified.

5.4.4 Process Requirements

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

No Process Requirements specified.

6 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*
*#**Contact:** RE Wiki Roles & Responsibilites page – Role: Application Functional Safety Engineer*

6.1 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). There needs to be a rationale why other system behaviors / functions are not considered.*

ID	Name
	Activate Rear Fog Light
	Deactivate Rear Fog Tell Tale
	Deactivate Rear Fog Light
	Activate Rear Fog Tell Tale

Table 11: System Behaviors for HARA

6.2 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 – HARA*

ID	Assumption	
	Name	Rear Fog Light operational
	Description	This assumption defines that the actual feature function is operational
	Purpose	
	Category	
	Related Requirements IDs	
	Name	Rear Fog Light Intermittent (de-)activation above 0,5 Hz
	Description	The intermittent De-/activation of the Rear Fog Light or its tell tale is above 0,5 Hz
	Purpose	
	Category	<UNSPECIFIED>
	Related Requirements IDs	
	Name	Driver has not yet understood inverted logic
	Description	This assumes that the driver has not yet walked out the car/ asked other passangers to validate that the logic of the rear fog light switch is inverted
	Purpose	
	Category	<UNSPECIFIED>
	Related Requirements IDs	

Table 12: Functional Safety Assumptions

6.3 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 – HARA*

6.4 Functional Safety Requirements

*#**Classification**: Functional Safety only*
*#**Hint:** The section lists the Functional Safety Requirements (FSRs) derived from*
*- a Safety Goal (list in subsections **Error! Reference source not found.** and following)*
in this case each FSR should trace back to a safety goal in ch. 6.3
*- and Assumptions (list in subsection **Error! Reference source not found.**).*
in this case each FSR should trace back to an assumption in ch. 6.2.
*In section **Error! Reference source not found.** "**Error! Reference source not found.**" the initial FSRs from chapters **Error! Reference source not found.** to **Error! Reference source not found.** may be decomposed, if required.*
*#**Link:** Functional Safety Sharepoint – Functional Safety Concept*
RE Wiki - Requirements Attributes
*#**Classification**: Functional Safety only*
*#**Hint:** The section lists the Functional Safety Requirements (FSRs) derived from a Safety Goal and Assumptions. The following should be noted for the use of the attribute fields for FSRs*
- The "Source Req" trace link field in each FSR should have a reference to
- a safety goal in ch. 6.3 "Safety Goals" or
- an assumption in ch. 6.2 "Safety Assumptions"
*#**Link:** Functional Safety Sharepoint – Functional Safety Concept*
RE Wiki - Requirements Attributes

6.4.1 Derivation of Functional Safety Requirements on Assumptions

*#**Classification**: Functional Safety only*
*#**Hint:** Derive requirements from the Assumptions (refer to section "Safety Assumptions"*

No Functional Safety Requirements tracing to Assumptions specified.

6.5 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 decomposition rationale is the reason why the decomposition was performed, whereas the rationale for each requirement expresses the reason and thought behind that particular requirement and should include how the requirement is able to independently fulfill the needs of the parent requirement.*
*#**Link:** Functional Safety Sharepoint - Functional Safety Concept*

6.5.1 Decomposition of Functional Safety Requirement

7 FUNCTIONAL ARCHITECTURE

*#**Classification:** Optional (mandatory for Functional Safety)*
*#**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*
- *SysML - Activity Diagrams or RE Wiki - Data Flow Diagrams*
- *Data Flow Diagram: RE Wiki – Data Flow Diagram*

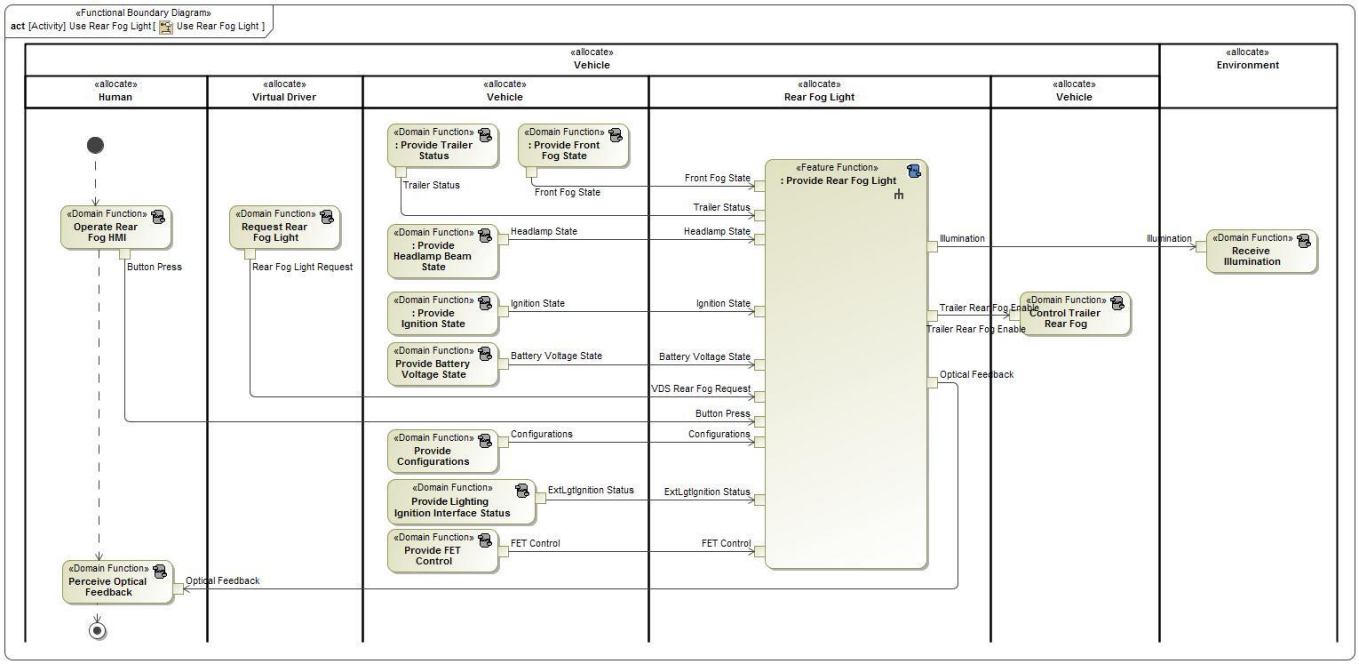


Figure 5: Use Rear Fog Light

7.1 List of Functions

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

Function Name	Description	Comments
(activity) Provide Battery Voltage State	*(activity)*	
(activity) Provide Ignition State	*(activity)*	
(activity) Receive Illumination	*(activity)*	
(activity) Provide Trailer Status	*(activity)*	
(activity) Provide Front Fog State	*(activity)*	
(activity) Control Trailer Rear Fog	*(activity)*	
(activity) Perceive Optical Feedback	*(activity)*	
(activity) Provide Headlamp Beam State	*(activity)*	

Function Name	Description	Comments
(activity) Operate Rear Fog HMI	*(activity)*	
(activity) Provide Rear Fog Light	*(activity)*	
(activity) Request Rear Fog Light	*(activity)*	
(activity) Provide Lighting Ignition Interface Status	*(activity)*	
(activity) Provide Configurations	*(activity)*	
(activity) Provide FET Control	*(activity)*	

Table 13: List of Functions

8 LOGICAL ARCHITECTURE

*#**Classification:** Functional Safety Analysis only – this section is actually not part of the Feature Document template currently released by the Requirements Engineering process.*
*#**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*

8.1 Logical Interfaces

*#**Classification:** Functional Safety Analysis only*
*#**Hint:** Describe the interactions of the feature with other features or elements.*

9 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					

Table 14: Open Concerns *(Not supported by MagicDraw report generation)*

10 REVISION HISTORY

*#**Hint:** A new version number is assigned to a document with a given revision each time it is checked in to Team Center (TCSE). After release of a revision, the document cannot be edited and no new versions can be created on that revision. When updating the document after that, a new revision has to be created and new versions on that revision will be created upon checking in.*

No Revision History found.

11 APPENDIX

11.1 Definitions

No terms specified.

11.2 Abbreviations

No acronyms specified.

Document ends here.