Feature Document (FD)

Integrated Security Cameras (ISC) - U718 China Variant

<<Feature>>
(F005770)

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Integrated Security Cameras (ISC) U718 China Variant

1 INTRODUCTION

1.1 Document Purpose

A Feature Document (FD) document defines a Feature on Concept Level. It 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. Refer FFSG01.10 Feature Document Guideline for how to apply the Feature Doc template for Functional Safety.

1.2 Document Scope

This Feature Document (FD) specifies the following features:

Feature ID	Feature Name	Owner	Reference
F005770	ISC (Program(s): 25 U71X)	Ishan Gupta / Michael Wohlfarter / Corey Minous / Darnell Fuller / Sivaram Dogiparthi / Ariana Moreno	

Table 1: Features described in this FD

1.3 Document Audience

The FD is written by the feature owner of ISC. 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.

1.3.1 Stakeholder List

Name	CDSID	Role	Stakeholder Group
Mike Ehlert	mehlert2	P708 Feature Delivery Leader	Systems Engineer
Randy Chinoski	rchinosk	BCM Team	Systems Engineer
Savvas Pechlivanidis	spechli1	APIM	Systems Engineer
Andy Charalambous	acharala	Mgr FordPass Products EU	Systems Engineer
TBD - Feature Team to Secure Agreement	tbe	Radar Unit	Systems Engineer
Laura Check	lburek	SYNC	Systems Engineer
Bernard Licari	blicari	Module Engineer	Systems Engineer
Amit Jariwala	ajariwa2	APIM	Systems Engineer
Gerald Barr	wbarr5	Feature modeler	Systems Engineer
Michael Wohlfahrter	mwohlfah	System Architect	Systems Engineer
Alejandro Becerra	jbecer16	Feature modeler	Systems Engineer
Tarik Safir	tsafir	Bed Radar	Systems Engineer
Stuart Salter [PSA]	ssalter	Power Supply Architecture	Systems Engineer
Carmen Baldovi Astarloa	mbaldovi	Cameras	Systems Engineer
Brian Wolski	bwolski1	Cameras	Systems Engineer
James Bridges	jbridge6	FordPass EU Product Mgr	Systems Engineer
Michael Smith	msmi1203	FuSa engineer	Systems Engineer
Peter McCabe (HW)	pmccabe3	PDB Team	Systems Engineer
Peter Sripinyo (SW)	psripiny	PDB Team	Systems Engineer

Name	CDSID	Role	Stakeholder Group
Aaron Mills	amills2	ADAS Team	Systems Engineer
Gregg Byrne	gbyrne15	Cybersecurity	Systems Engineer
Tim Zuraw	tzuraw	SE Features	Systems Engineer
Timur Pulathaneli	tpulatha	SV AppLink Partner Dev (CVPP)	Systems Engineer
Andrew Steinman	asteinm3	Functional Platform Architecture	Systems Engineer
Sebastian Koessler	skoessle	Body Electronic System Engineer	Systems Engineer
Samantha Hampton	shampt19	Cybersecurity	Systems Engineer
Ron Hammond	rhammo10	SEM	Systems Engineer
Jeremy Rawlings	jrawlin4	Global Feature Manager	Systems Engineer
Trevor Sherts	tsherts	UX Project Lead	Systems Engineer
Narayanan Mahesh	nmahesh8	Cybersecurity	Systems Engineer
Christian Moran	cmoran2	FordX Semi-integrated Sentinel Lead	Systems Engineer
Tom Skwirsk	tskwirsk	EPLM Manager	Systems Engineer
Tamaira Linares	tlinares	Module Engineer	Systems Engineer
Matt Affeldt	maffeldt	ADAS (DAT 2.2)	Systems Engineer
Venkata Murali Chitturi	mchittur	SDN Team	Systems Engineer
Beatrice Fusier	bfusier	V710 Feature Delivery Leader	Systems Engineer
Dave Orris	dorris	SYNC	Systems Engineer
Medha Karkare	mkarkare	R&A Software Architect (and camera service background)	Systems Engineer
John Budaj	jbudaj	Physical Electrical Architecture	Systems Engineer
Mathew Affeldt	maffeldt	ADAS Team	Systems Engineer
Richard Luken	rluken2	SE	Systems Engineer
Ikhlas Abdulsaid	iabulsai	BCM Team	Systems Engineer
Mark Porter	mporter	TCU	Systems Engineer
Dilip Kerai	dkerai4	UNBE Electronics Engineer	Systems Engineer
Sai Prasanth Velusamy	svelusa2	Electrical Architecture	Systems Engineer
Nitin Kamboj	nkamboj	ADAS Team	Systems Engineer
Venket Karramreddy	vkarramr	MDV	Systems Engineer
Vijaya Kumar Midde	vmidde	MDVVC Feature Owner	Systems Engineer
Sivaram Sudhak Dogiparthi	sdogipar	SDN Team	Systems Engineer
David Ooms	dooms	D-Ford Human-Centric Design Project Lead	Systems Engineer
Kerri Sayers	ksayer53	CV Electronics Engineer	Systems Engineer
Claudia Zaragoza	czarago1	EESE Core Camera Engineer	Systems Engineer
Jeffrey Wallat	jwallat	CVPP Architecture	Systems Engineer
Dan Sullivan	dsulli30	System Architect	Systems Engineer
Jin Kim	jkim119	ECG Team	Systems Engineer

Name	CDSID	Role	Stakeholder Group
Ian Salsbury	isalsbu1	CV Beacon PM Lead	Systems Engineer
Ritesh Pandya	rpandya	ECG Team	Systems Engineer
Ariana de Moreno bautista	amorenob	SDN Team	Systems Engineer
Ishan Gupta	igupta1	SE Feature owner	Systems Engineer
Ben Chen	bchen9	BCM Team	Systems Engineer
Candice Villanueva	cvilla30	FordPass Team	Systems Engineer
Jason Baldwin	jbaldw10	CV Body and Security Supervisor	Systems Engineer
Donald Bilger	dbilger	SE Features	Systems Engineer
Stephen Orris	sorris1	Netcom	Systems Engineer
Michael Leibovitch	mleibov1	TCU	Systems Engineer
Paul Linden	plinden6	Quality	Systems Engineer
Hassan Halabian	hhalabia	ECG Team	Systems Engineer
John Ricks	jricks7	Body Control	Systems Engineer
Kyaw Kyaw Soe	ksoe	SE Features CV/C2	Systems Engineer
Sridhar Chidam	schidam	Functional Platform Architecture	Systems Engineer
Rumeli Das	rdas9	SDN Team	Systems Engineer
Micha Kahlen	mkahlen	APIM	Systems Engineer
Jonathan Allan	jallan6	Underbody Electronics SV	Systems Engineer
Gwen Ald	gald	Electrical Architecture	Systems Engineer
Yamen Taleb	ytaleb	FordPass Team	Systems Engineer
Andrea Barretto	abarre54	FuSa engineer	Systems Engineer
Vikram Gokhale	vgokhale	CDX746 Feature Delivery	Systems Engineer
Eric Eaton	eeaton10	TCU	Systems Engineer
Vallade Matylda	mvallad2	ADAS Team	Systems Engineer
Michael Alievsky	malievsk	ECG Team	Systems Engineer
Nihan Cakir	ncakir	CSM	Systems Engineer
Srikanth Hari	shari10	APIM	Systems Engineer
Ling Wang	lwang235	SDN Team	Systems Engineer
Shani Allison	salliso3	Feature Delivery Leader Sentinel	Systems Engineer
Joe Oravec	joravec4	SYNC	Systems Engineer
Nada Ismail	nismail6	TCU	Systems Engineer
Stuart Salter [PS]	ssalter	Power supply	Systems Engineer
Shawn Dean	sdean44	Chief Eng Features	Systems Engineer
Steven Chapekis	schapeki	SDN Team	Systems Engineer
Kristen Steinhour	ksteinh5	EPLM	Systems Engineer
John Popovecz	jpopovec	BCM Team	Systems Engineer
Nunzio DeCia	ndecia	ECG Team	Systems Engineer
Thomas Jorda	tjorda	EV Strategy and Planning CDX74X Program	Systems Engineer
Sam Harris	sharr266	Non-integrated Sentinel Feature Owner	Systems Engineer
John Routledge	jroutle6	D-Ford	Systems Engineer
Timothy Rahtz	trahtz	FordPass Team	Systems Engineer
Hussein Berry	hberry11	Power Supply Architecture	Systems Engineer

Name	CDSID	Role	Stakeholder Group
Benjamin Rocci	brocci	Connectivity Strategy and Planning	Systems Engineer
Bruce Williams	bwilli28	Physical Electrical Architecture	Systems Engineer
Jim Weinfurther	jweinfur	Body Control	Systems Engineer

Table 2: Stakeholder's list

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:

Introduction	– Explains 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.
Feature Overview	– States briefly the background and the purpose of the feature, feature variants and corresponding regions and markets. Also includes input requirements, assumptions, and constraints.
Feature Context	– Describes all external entities, which have an influence on the feature.
Feature Modeling	– Contains Use Case, Driving Scenarios, State Charts to describe the functional behavior of the feature.
Feature Requirements	– Lists functional and non-functional requirements of the feature.
Functional Safety	– Lists System Behaviors, Safety Goals and Safety Requirements of the feature.
CyberSecurity	– Lists Security Goals and Security Requirements of the feature.
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.
Traceability Matrix	– Traceability Matrix.
Open Concerns	– List of Open Concerns
Revision History	– 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.
Appendix	– Appendix

1.5 Document Conventions

1.5.1 Classification of Chapters

A chapter is considered mandatory, unless the chapter or its parent chapter(s) are categorized by using the tag:

> **#Classification:** *Some Condition*

If no requirement/other content is known for a mandatory chapter, leave a statement "Not Applicable"

Some chapters have a follow certain rules in context of specific Ford processes, e.g. Functional Safety. This is indicated at the beginning of the corresponding chapter by the tags:

> **#Functional Safety:** *Some process specific explanation*
> **#Cybersecurity:** *Some process specific explanation*

1.5.2 Requirements Templates

Refer to "How to use the Specification Templates" on how to use the specification templates and the VBA macros to create/edit the requirements in the specifications.

1.5.2.1 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.

1.6 References

1.6.1 Ford Documents

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

Reference	Title	Revision
FeatureDocument_MDVVC_V6.1_UPV1_08092019	As reference/name	MDVVC_Feature_Specification 27.60/35
FeatureDocument_MDVVC_V.3_FDJ_01312020	As reference/name	
Ford GIS Standard	As reference/name	
FunctionSpec_MDVVC_V6.2_UPV2_11152019	As reference/name	
modevi_full_sw_reqs_draft2.6.docx	As reference/name	
modevi_hmiflows.vsdx	As reference/name	
Sentinel - Camera Manager	As reference/name	
Sentinel - SPSS	As reference/name	
Sent_FD_20210617a_Phoenix.docx	Sentinel Feature Dociment - Phoenix Variants	
Sent_FD_20210812a_V710.docx	Sentinel Feature Document - V710 Variant	
Sent_FIS_20210617b_Phoenix.docx	Sentinel FIS - Phoenix Variants	
Sent_FIS_20210813a_V710.docx	Sentinel FIS - V710 Variant	
Sent_FS_20210617a_Phoenix.docx	Sentinel Functional Specification - Phoenix Variants	
Sent_FS_20210812a_V710.docx	Sentinel Functional Specification - V710 Variant	

Table 3: Ford internal Documents

1.6.2 External Documents and Publications

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

Reference	Document / Publication	Document Location
European General Data Protection Regulation GDPR (EU) 2016/679	As reference/name	
IEEE Std 1012-2004 IEEE Standard for Software Verification and Validation	As reference/name	
ISO/IEC 19500-2:2003	As reference/name Information technology -- Open Distributed Processing -- Part 2	

Reference	Document / Publication	Document Location
UML Testing Profile (UTP), v1.2	As reference/name	

Table 4: External documents and publications

1.7 Glossary

See Appendix for Definitions and Abbreviations.

1.7.1 Definitions

1.7.2 Abbreviations

1.7.3 Parameters / Values

No Parameters / Values specified.

2 FEATURE OVERVIEW

2.1 Purpose and Description of Feature

Monitoring of the area around a parked vehicle using onboard sensors. Sensors include :
vehicle tilt, vehicle acceleration, ultrasonic sensors in cabin, interior cameras (where fitted) and external cameras.

Threat notifications are sent to the user via the FordPass App. Video and threat data will be stored locally (USB jump-drive - where fitted).
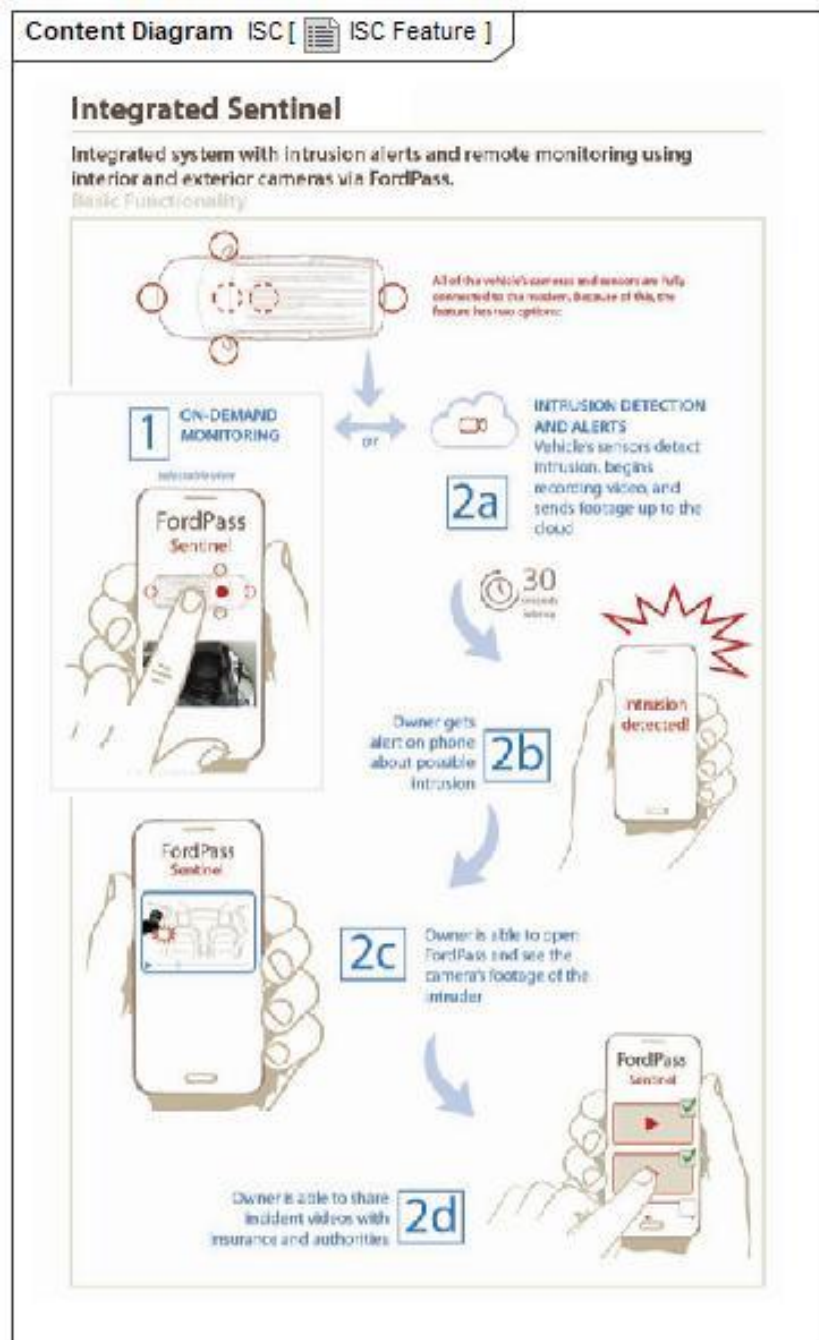
Figure 1: ISC Feature

2.2 Feature Variants

Variant Name	Variant Description	Remarks
[1] ISC Live View Only	MY23 - FNV3 - nonBEV Live Video Streaming No Manual Recording - No automatic Recording Not Capable of View/Store Video to Cloud 1 - 2 Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed SYNX QNX No USB Video Storage/Play Capability	
[2] P708	MY23 - FNV3 - nonBEV Live Video Streaming Manual Recording - Automatic Recording Capable of View/Store Video to Cloud No Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed SYNX QNX USB Video Storage/Play Capability	
[3] P702 MCA	MY24 - FNV3 - nonBEV Live Video Streaming Manual Recording - Automatic Recording Capable of View/Store Video to CloudNMo Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed SYNX QNX USB Video Storage/Play Capability	
[4] V710 / V710 ICA	MY23 / 25 - FNV3 - nonBEV Live Video Streaming Manual Recording - Automatic Recording Capable of View/Store Video to Cloud 1 - 2 Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 2 CSM Units No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed SYNX QNX USB Video Storage/Play Capability	
[5] U611/625 MCA	MY24 - FNV3 - nonBEV Live Video Streaming Manual Recording - Automatic Recording Capable of View/Store Video to Cloud No Internal Cabin Cameras	

Variant Name	Variant Description	Remarks
	No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed Phoenix USB Video Storage/Play Capability	
[6] CDX707 NA	MY24 - FNV3 - nonBEV Live Video Streaming Manual Recording - Automatic Recording Capable of View/Store Video to Cloud No Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed Phoenix USB Video Storage/Play Capability	
[7] U717/8	MY25 - FNV3 - nonBEV Live Video Streaming Manual Recording - Automatic Recording Not Capable of View/Store Video to Cloud 2 Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed Phoenix USB Video Storage/Play Capability	
[8] U718 China	MY25 - FNV3 - nonBEV Live Video Streaming No Manual Recording - Automatic Recording to USB Only Not Capable of View/Store Video to Cloud 2 Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed Duer OS USB Video Storage/Play Capability	**SCOPE OF THIS DOCUMENT – VARIANT 8 ONLY**
[9] U759/760	MY25 - FNV4 - BEV Live Video Streaming Manual Recording - Automatic Recording Capable of View/Store Video to Cloud 2 Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed FNV4 SYNC USB Video Storage/Play Capability	

Variant Name	Variant Description	Remarks
[10] CX748	MY25 - FNV4 - BEV Live Video Streaming Manual Recording - Automatic Recording Capable of View/Store Video to Cloud 2 Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed FNV4 SYNC USB Video Storage/Play Capability	
[11] U760 China	MY25 - FNV4 - BEV No Live Video Streaming No Manual Recording - Automatic Recording to USB Only Not Capable of View/Store Video to Cloud 2 Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed FNV4 SYBC USB Video Storage/Play Capability	
[12] CX748 China	MY25 - FNV4 - BEV No Live Video Streaming No Manual Recording - Automatic Recording to USB Only Not Capable of View/Store Video to Cloud 2 Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed FNV4 SYNC USB Video Storage/Play Capability	
[13] P800	MY26 - FNV4 - BEV Live Video Streaming Manual Recording - Automatic Recording Capable of View/Store Video to Cloud 1 - 2 Internal Cabin Cameras Truck Bed/Aux Camera 360degree External Camera View 1 CSM Unit Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed FNV4 SYNC USB Video Storage/Play Capability	
[14] V801	MY26 - FNV4 - BEV Live Video Streaming Manual Recording - Automatic Recording Capable of View/Store Video to Cloud 2 Internal Cabin Cameras No Truck Bed/Aux Camera 360degree External Camera View	

Variant Name	Variant Description	Remarks
	2 CSM Units No Truck Bed Radar No Audio Deterrent - No Audio detect in Truck Bed FNV4 SYNC USB Video Storage/Play Capability	

Table 5: Feature Variants

2.2.1 Regions & Markets

Market / Region Variant Name	North America	South America	Europe	Middle East/Africa	Asia / Pacific	China
[1] ISC Live View Only	Optional	No	No	No	No	No
[2] P708	Optional	No	No	No	No	No
[3] P702 MCA	Optional	No	No	No	No	No
[4] V710 / V710 ICA	No	No	Optional	No	No	No
[5] U611/625 MCA	Optional	No	No	No	No	No
[6] CDX707 NA	Optional	No	No	No	No	No
[7] U717/8	Optional	No	No	No	No	No
[8] U718 China	No	No	No	No	No	Optional
[9] U759/760	Optional	No	No	No	No	No
[10] CX748	Optional	No	No	No	No	No
[11] U760 China	No	No	No	No	No	Optional
[12] CX748 China	No	No	No	No	No	Optional
[13] P800	Optional	No	No	No	No	No
[14] V801	No	No	Optional	No	No	No

Table 6: Regions & Markets

2.3 Input Requirements/Documents

Reference (Reference as listed in ch. "**Error! Reference source not found.**")	Section/Requirement	Description	Derived Requirement (optional – reference to requirement in ch. "**Error! Reference source not found.**")
Attribute Requirements			
	Remotely Monitor Vehicle	When requested by the user the ISC shall allow remote monitoring of the vehicle	
Ford Engineering Standards			
	<Example: some SDS (requirement)>		
Legal Regulations			
	Compliance with FMVSS101	The Feature shall comply with FMVSS101.	
Industry Standards			

Reference (Reference as listed in ch."**Error!R eference source not found.**")	Section/Requirement	Description	Derived Requirement (optional – reference to requirement in ch. "**Error! Reference source not found.**")
	ISO 26262	The system should be developed according to Ford's implementation of Functional Safety.	
Other Sources			

Table 7: Input Requirements/Documents

2.4 Lessons Learned

Quality History Items:
1. Limited to only one smart phone alert
2. Parking in Area with Poor Cellular Coverage
3. Sudden No Power or Lost communication
4. Sudden block or covering of camera lens
5. Cloud Failure no record of theft attack or recording stops prematurely
6. Poor quality image. Dark image, jerky image
7. Poor Detection performance in rain/snow/hail or adverse weather conditions
8. Road salt, grime, dust, foreign objects on Camera
9. Not Able To Connect Live View As It Is Happening
10. Does not power up
11. Does not respond quick enough for Crash Event
12. Difficult to set up Sentinel on my SmartPhone
13. Fleet User with Multiple Vehicles

2.5 Assumptions

#	Name	Documentation
1	Assumption1	Dat 2.2 or above ADAS module
2	Assumption2	ECG 2.0 or above module

3 FEATURE CONTEXT

3.1 Feature Context Diagram
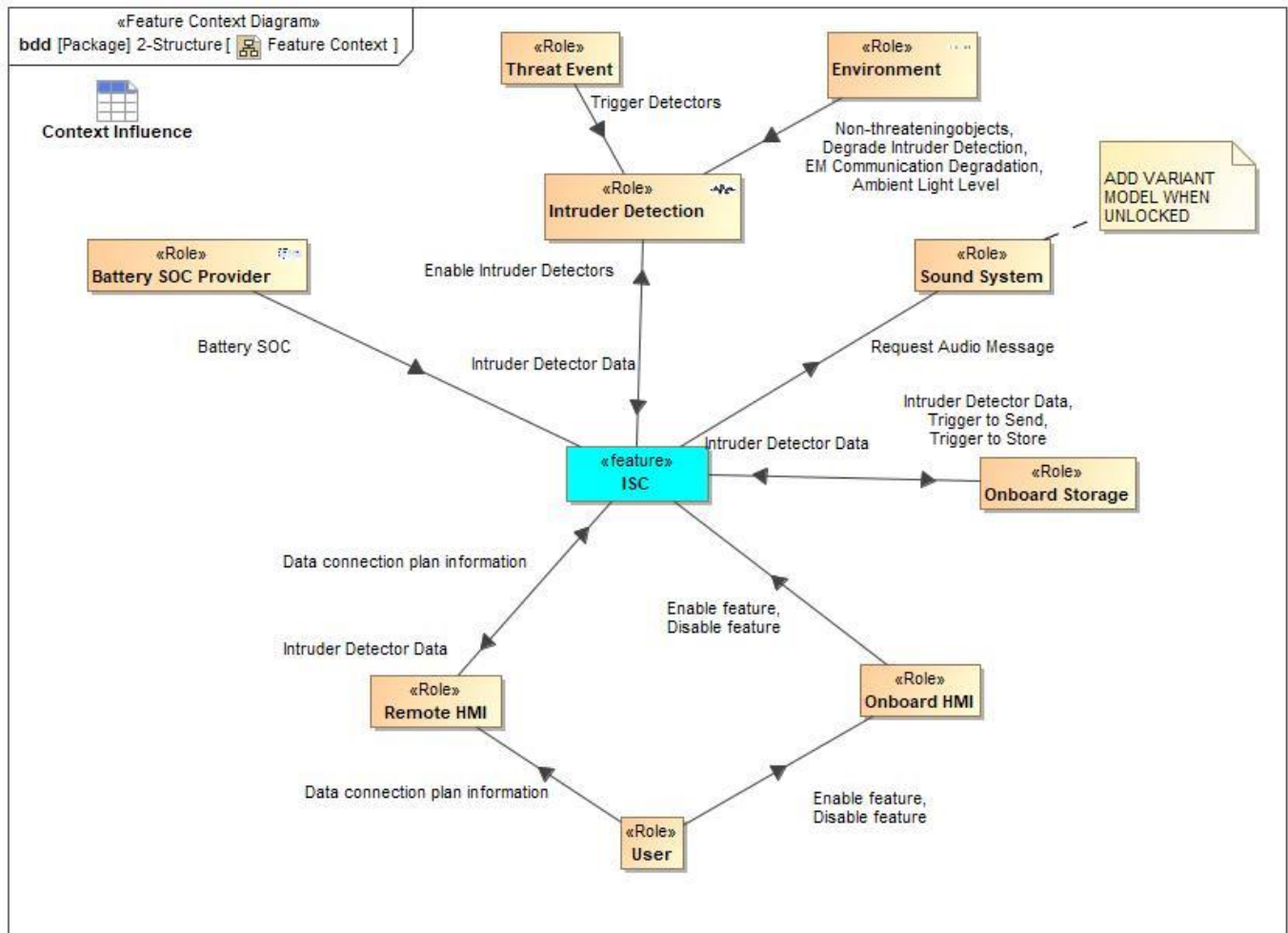
Figure 2: Feature Context

3.2 List of Influences

ID	External Entity	Influence Description
Ambient Light Level	Environment To Intruder Detection	Wind etc may move vehicle.
Battery SOC	Battery SOC Provider To ISC	Electrical power is required by the feature. The battery state of charge (SOC) information is required as Sentinel will need to be disabled if the SOC is below a threshold value.
Data connection plan information	Remote HMI To ISC	Information to allow the data connection plan to be established. Information includes paswords and contact information.
	User To Remote HMI	Information to allow the data connection plan to be established. Information includes paswords and contact information.
Degrade Intruder Detection	Environment To ISC	Camera lenses may be obscured preventing clear view.
	Environment To Intruder Detection	Camera lenses may be obscured preventing clear view.
Disable feature	Onboard HMI To ISC	The intruder detectors must be enabled.

ID	External Entity	Influence Description
	User To Onboard HMI	The intruder detectors must be enabled.
EM Communication Degradation	Environment To Intruder Detection	Signals to the cloud may be attenuated by being in poor signal area on in an enclosed space.
Enable feature	Onboard HMI To ISC	The intruder detectors must be enabled.
	User To Onboard HMI	The intruder detectors must be enabled.
Enable Intruder Detectors	ISC To Intruder Detection	The intruder detectors must be enabled.
Intruder Detector Data	ISC To Onboard Storage	Data from the various intruder detectors needs to be fed back to the feature.
	ISC To Remote HMI	Data from the various intruder detectors needs to be fed back to the feature.
	Intruder Detection To ISC	Data from the various intruder detectors needs to be fed back to the feature.
	Onboard Storage To ISC	Data from the various intruder detectors needs to be fed back to the feature.
Non-threateningobjects	Environment To ISC	Wind etc may move vehicle.
	Environment To Intruder Detection	Wind etc may move vehicle.
Request Audio Message	ISC To Sound System	Electrical power is required by the feature. The battery state of charge (SOC) information is required as Sentinel will need to be disabled if the SOC is below a threshold value.
Trigger	Battery SOC Provider To ISC	Influence Description from Documentation field.
Trigger Detectors	Threat Event To ISC	Intruder triggers detectors such as: door ajar, accelerometer in vehicle, Ultrasonic detector, radar detector
	Threat Event To Intruder Detection	Intruder triggers detectors such as: door ajar, accelerometer in vehicle, Ultrasonic detector, radar detector
Trigger to Send	ISC To Onboard Storage	The storage of data and the streaming of that data after storage remotely must be enabled and disabled.
Trigger to Store	ISC To Onboard Storage	The storage remotely must be enabled and disabled.

Table 8: List of Influences

4 FEATURE MODELING

4.1 Operation Modes and States

4.2 Use Cases

4.2.1 Use Case Diagram
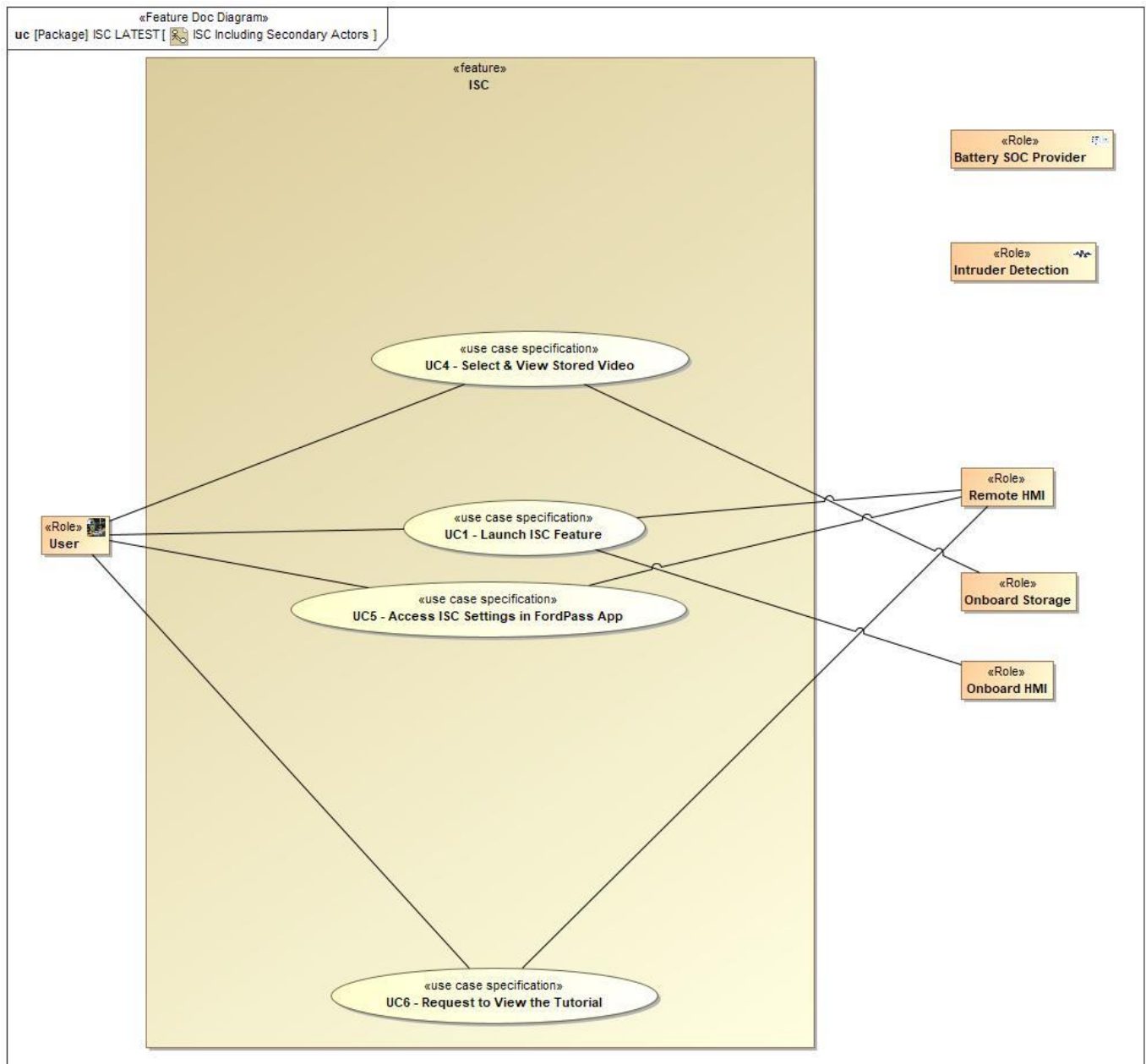
Figure 3: ISC Including Secondary Actors
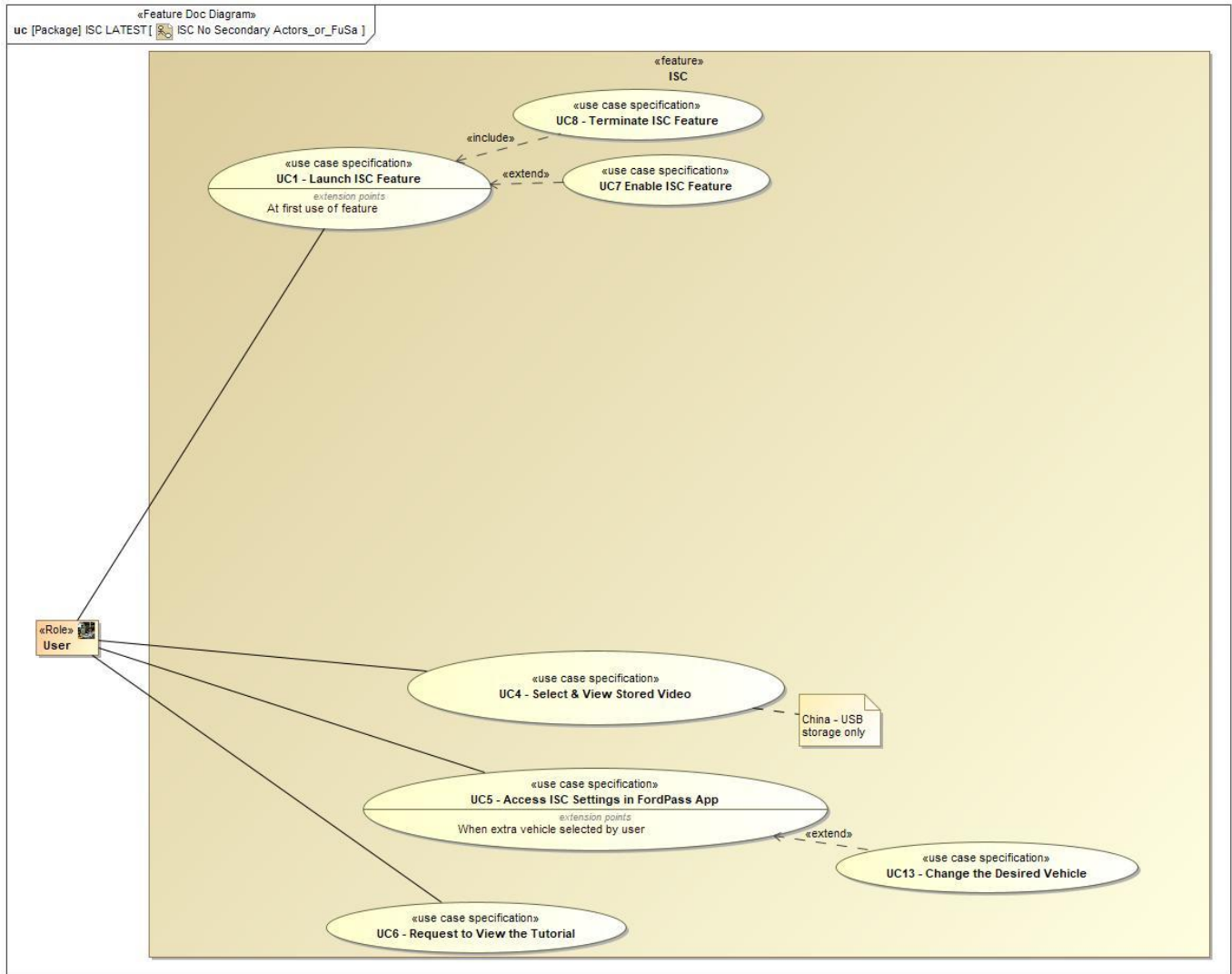
Figure 4: ISC No Secondary Actors_or_FuSa

4.2.2 Actors

Actor	Description
Onboard HMI	The user interface in the vehicle such as SYNC.
Onboard Storage	On board storage of intruder detector data for access later by the user. This has limitations versus remote storage, but will not be limited by having good communications to the remote storage site..
Remote HMI	HMI includes on board and remote communication between the feature and the user.
User	The user of the system, expected to normally be the driver or owner of the vehicle. Could also be someone involved with operating a commercial fleet of vehicles.

Table 9: List of Actors

4.2.3 Use Case Descriptions

UC8 - Terminate ISC Feature

Actors	Primary	User
	Secondary	Vehicle
Subject		ISC
Description		Terminate the ISC Feature.
Preconditions	PreC1	ISC feature is in Operational/ ON State.
Main Flow Description		Terminate ISC Feature
Main Flow	M1	User exits the ISC feature.
Postconditions	PostC1	The ISC allows to the user to close the FordPass App and switches to ON/ Enable state.

UC13 - Change the Desired Vehicle

Actors	Primary	User
	Secondary	Vehicle
Subject		ISC
Description		Change the Desired Vehicle.
Preconditions	PreC1	FordPass App Installed.
	PreC2	ISC feature is in Operational State.
	PreC3	Ignition OFF
Main Flow Description		Change the Desired Vehicle
Main Flow	M1	User terminates the video stream.
	M2	User terminates the ISC feature.
	M3	User selects another Ford Vehicle.
Postconditions	PostC1	The ISC process will be applied for the next vehicle selection.

UC7 Enable ISC Feature

Actors	Primary	User
	Secondary	Vehicle
Subject		ISC
Description		Describes how user enables ISC Feature.
Preconditions	PreC1	ISC in Disable state
	PreC2	Key-ON
Main Flow Description		Enable ISC Feature
Main Flow	M1	User selects the ISC feature enable option on the Vehicle Sync Screen.
	M2	User accepts the privacy settings to completely enable the feature.
Postconditions	PostC1	ISC feature switches to Enable State.

UC6 - Request to View the Tutorial

Actors	Primary	User
	Secondary	Vehicle
Subject		ISC
Description		Request to View the Tutorial.
Preconditions	PreC1	FordPass Application Installed.
	PreC2	ISC feature is in ON state.
Main Flow Description		Request to View the Tutorial
Main Flow	M1	User requests to view a tutorial of how the feature is operated.
Postconditions	PostC1	ISC stays in ON state and displays the tutorial

UC4 - Select & View Stored Video

Actors	Primary	User
	Secondary	Vehicle
Subject		ISC
Description		A selected video recording is played for the user
Preconditions	PreC1	ISC feature is in Operational/ ON State
Main Flow Description		Select & View Stored Video
Main Flow	M1	User selects video to view
	M2	Video player plays video
	M3	User requests stop play (or end of video)
	M4	Video playing stops
Postconditions	PostC1	User has seen video and list of videos available for viewing.

UC1 - Launch ISC Feature

Actors	Primary	User
	Secondary	Vehicle
Subject		ISC
Description		Describes how user launches ISC Feature
Preconditions	PreC1	Available Subscription
	PreC2	FordPass App Installed.
	PreC3	ISC feature is in Enable state.
	PreC4	Key-OFF/ Remote Start
	PreC5	No Deep Sleep Mode
Main Flow Description		User launches ISC feature from FordPass App
Main Flow	M1	User launches ISC feature from FordPass App.
Postconditions	PostC1	ISC feature switches to ON state.

UC5 - Access ISC Settings in FordPass App

Actors	Primary	User
	Secondary	Vehicle
Subject		ISC
Description		Access FordPass App Settings.
Preconditions	PreC1	FordPass App Installed.
	PreC2	ISC is in ON state.
Main Flow Description		Access FordPass App Settings
Main Flow	M1	User accesses to ISC settings FordPass App.
Postconditions	PostC1	ISC stays in ON state and FordPass App settings are displayed.

4.3 Driving and Operation Scenarios

SC_F_ISC_00014 Be Notified of Threat Event
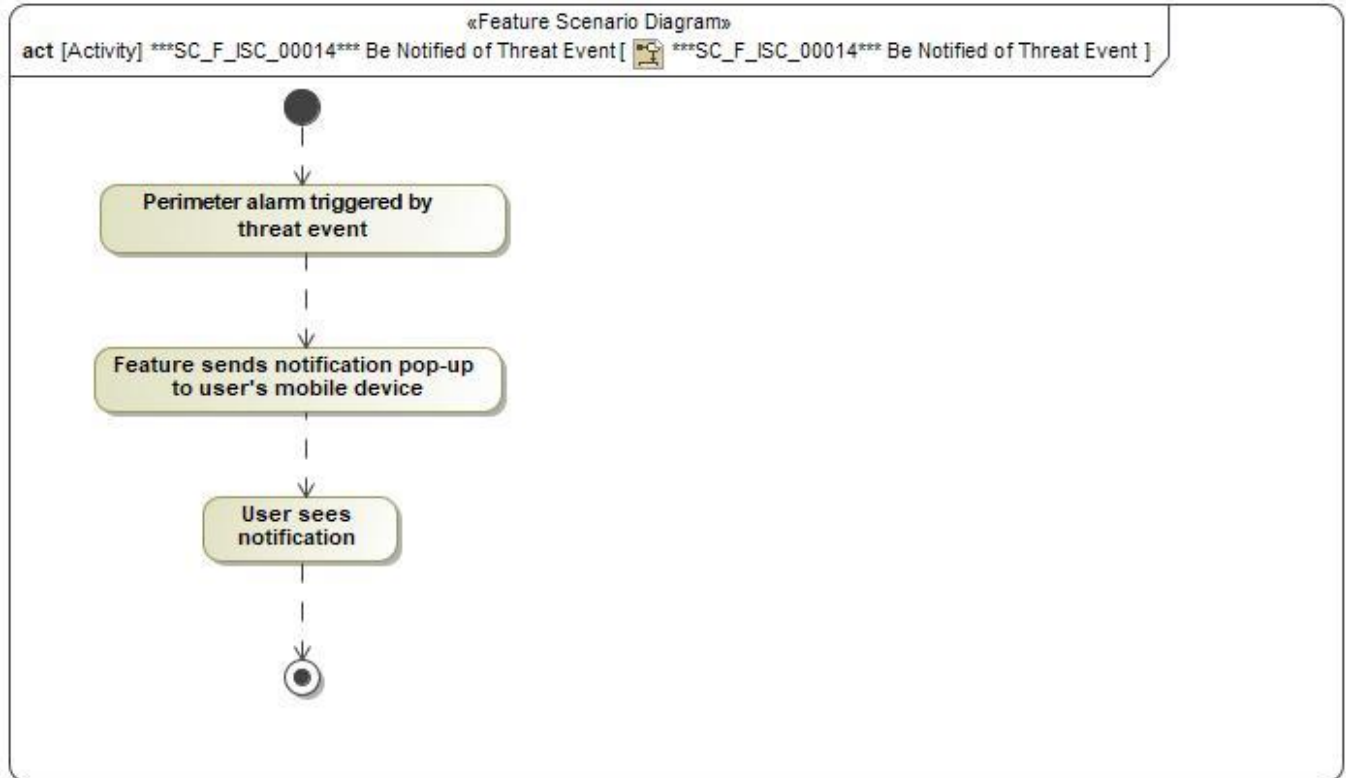
Figure 5: ***SC_F_ISC_00014* Be Notified of Threat Event**

SC_F_ISC_00017 Store Data to USB

«Feature Scenario Diagram»
act [Activity] ***SC_F_ISC_00017*** Store Data to USB [🎥 ***SC_F_ISC_00017*** Store Data to USB]

Video is streaming to the USB memory device.

Video is stored to the USB memory device.
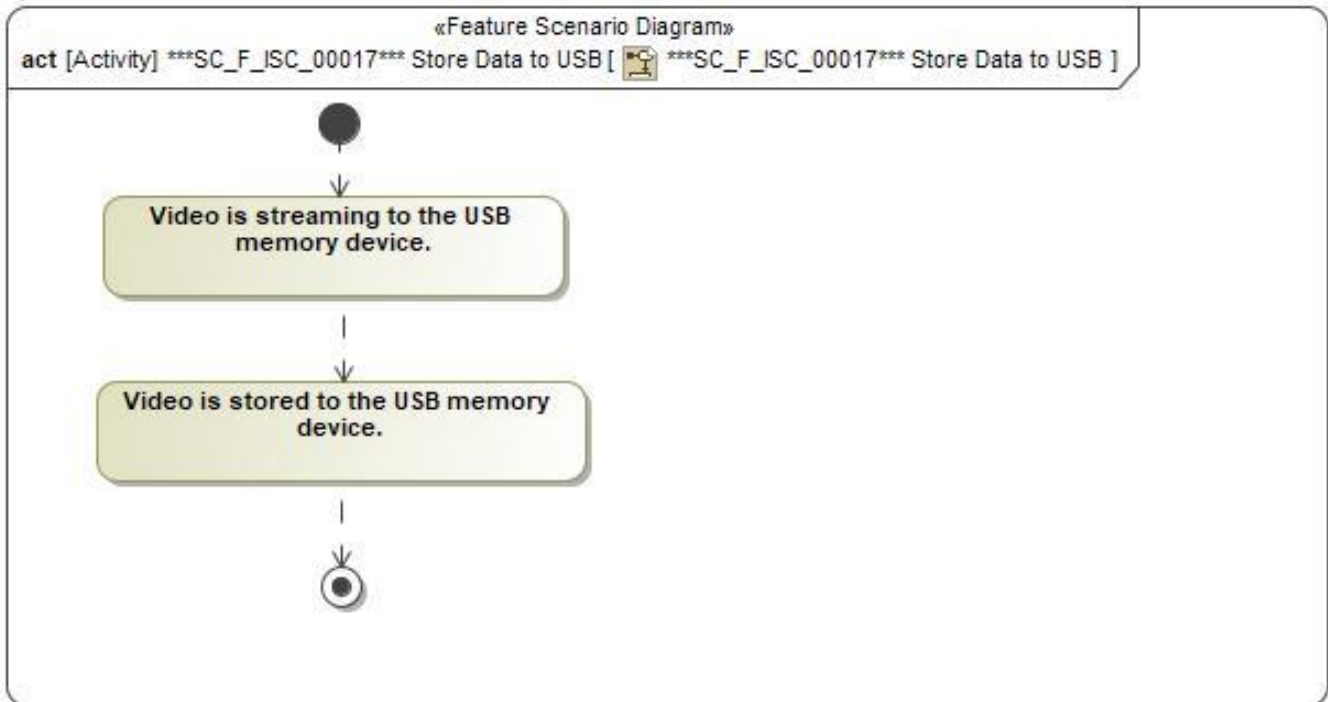
Figure 6: ***SC_F_ISC_00017* Store Data to USB**

SC_F_ISC_00021 Request Stored Video Stream on APIM Display

«Feature Scenario Diagram»
act [Activity] ***SC_F_ISC_00021*** Request Stored Video Stream on APIM Display [🎥 ***SC_F_ISC_00021*** Request Stored Video Stream on APIM Display]

From the ISC video selection screen on the APIM, the user selects a video to stream.

The video is displayed.

Figure 7: ***SC_F_ISC_00021* Request Stored Video Stream on APIM Display**

SC_F_ISC_00023 Video Quality Settings

«Feature Scenario Diagram»
act [Activity] ***SC_F_ISC_00023*** Video Quality Settings [***SC_F_ISC_00023*** Video Quality Settings]

User accesses to ISC feature settings on the ISC App.

User changes video quality feature settings.

ISC changes video quality setting.

ISC Application shall save the video quality setting.
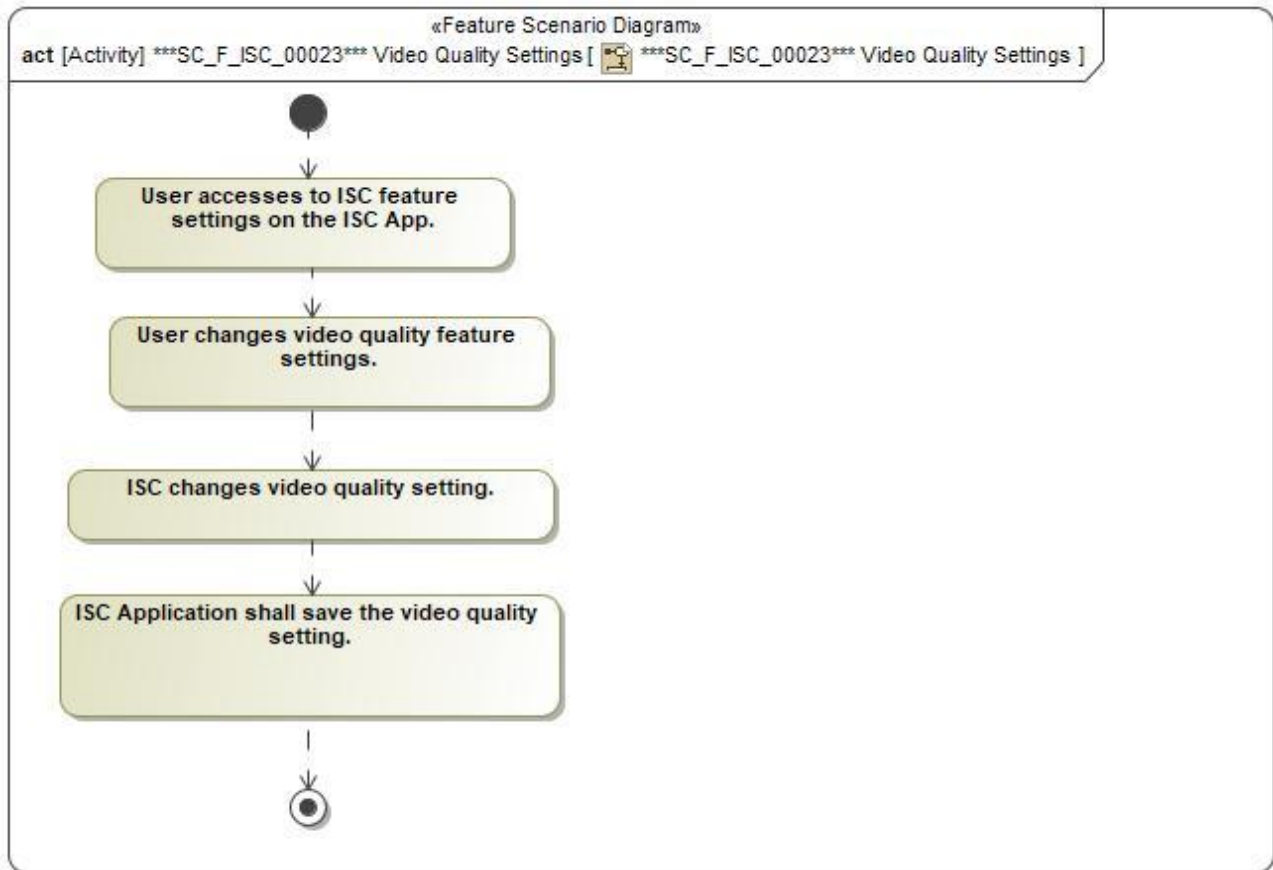
Figure 8: ***SC_F_ISC_00023* Video Quality Settings**

SC_F_ISC_00027 Set Configuration - Disable Threat Event Notifications

«Feature Scenario Diagram»
act [Activity] ***SC_F_ISC_00027*** Set Configuration - Disable Threat Event Notifications [***SC_F_ISC_00027*** Set Configuration - Disable Threat Event Notifications]

The user opens the settings screen on the ISC App.

The user either selects or deselects automatic threat notifications.
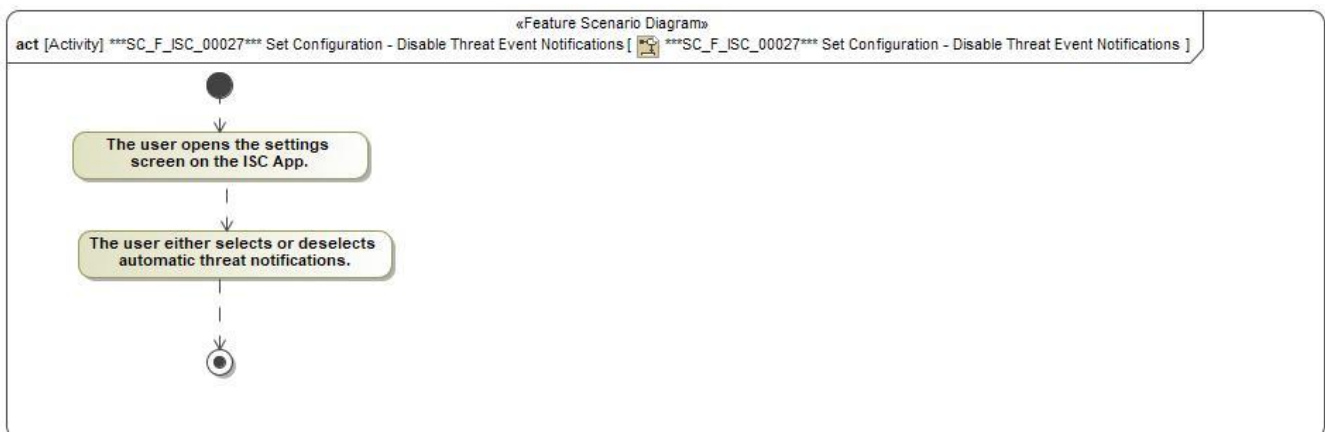
Figure 9: ***SC_F_ISC_00027* Set Configuration - Disable Threat Event Notifications**

SC_F_ISC_00028 View Tutorial

Document ID:
Date Issued: 2022/05/16
Date Revised: 2022/05/16
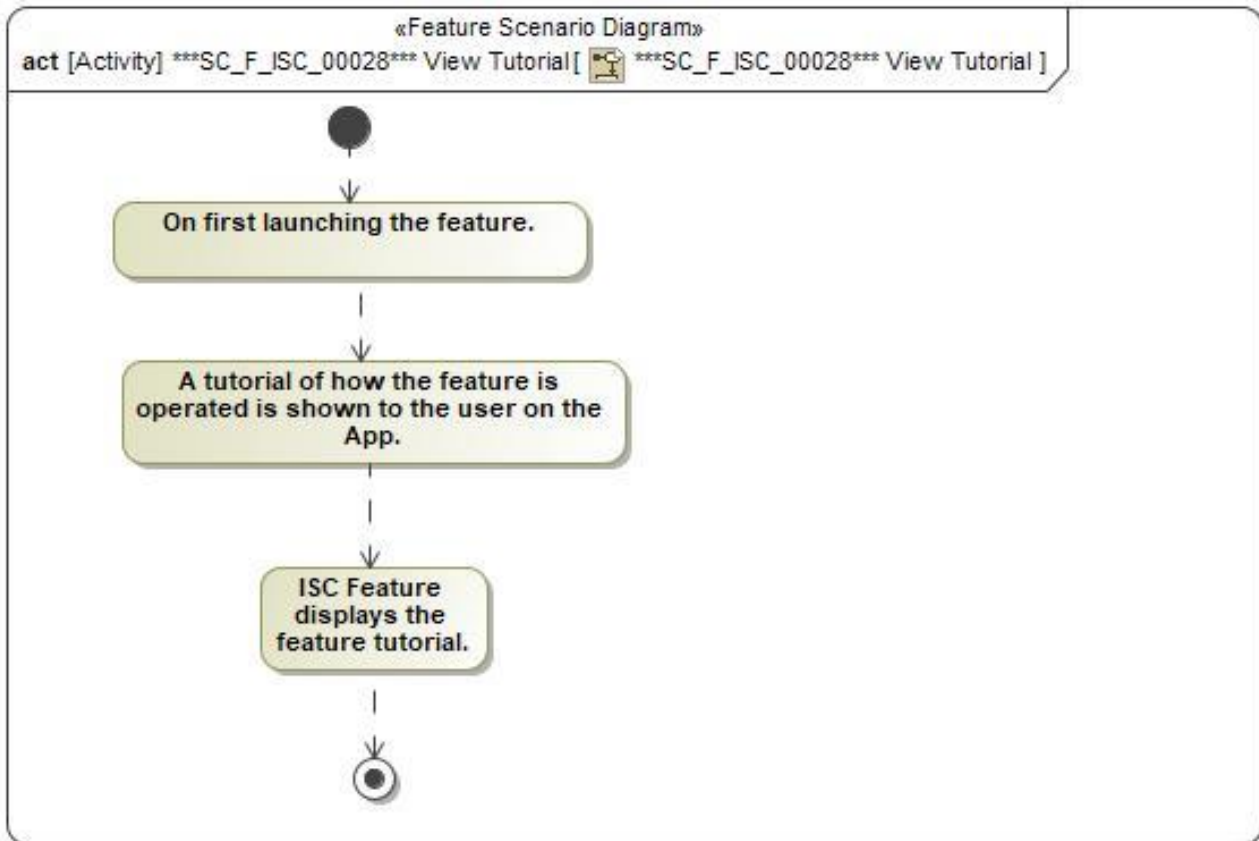
Figure 10: ***SC_F_ISC_00028*** View Tutorial

SC_F_ISC_00029 Skip Tutorial

«Feature Scenario Diagram»
act [Activity] ***SC_F_ISC_00029*** Skip Tutorial [***SC_F_ISC_00029*** Skip Tutorial]

On first launching the feature.

A tutorial of how the feature is operated is shown to the user on the App.

User skips viewing the full tutorial when it is presented to them.

ISC Displays the last viewed interface on the ISC App screen.
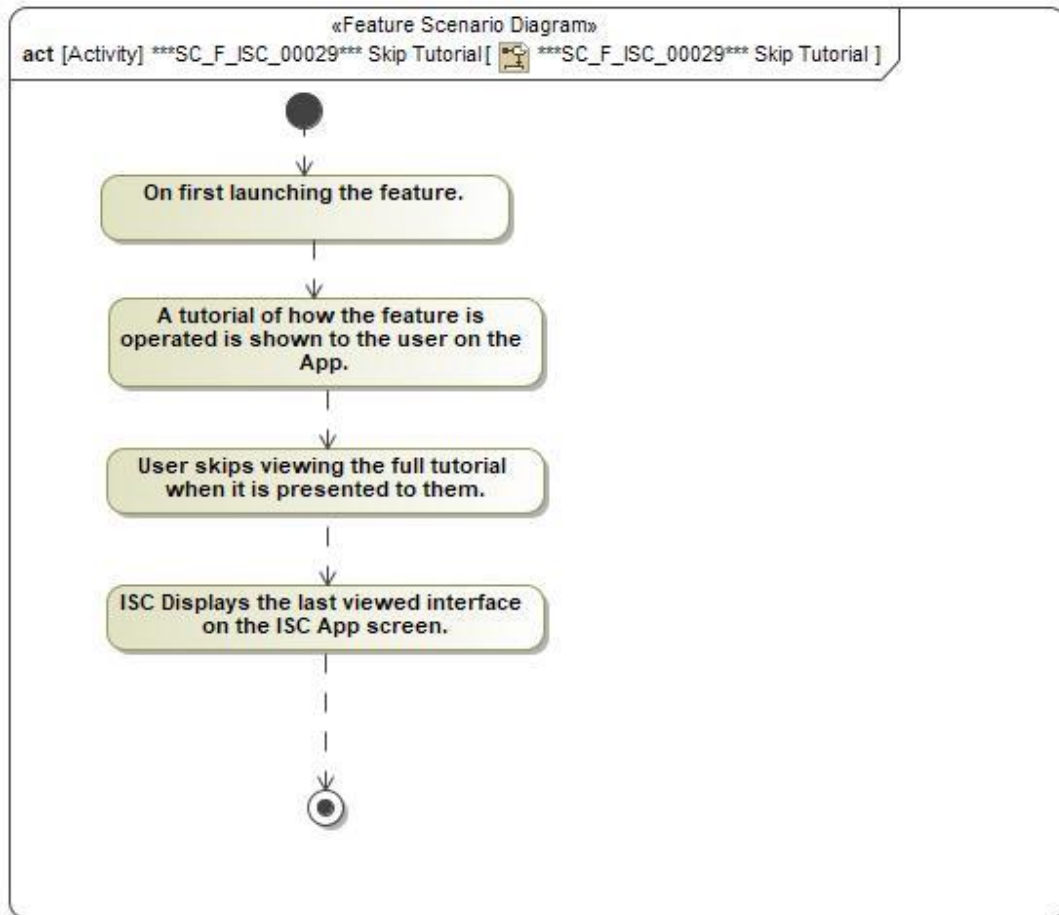
Figure 11: ***SC_F_ISC_00029* Skip Tutorial**

SC_F_ISC_00030 Terminate Video stream When the Vehicle is in Low Battery State of Charge

«Feature Scenario Diagram»
act [Activity] ***SC_F_ISC_00030*** Terminate Video stream When the Vehicle is in Low Battery State of Charge [***SC_F_ISC_00030*** Terminate Video stream When the Vehicle is in Low Battery State of Charge]

Low battery state of charge is detected.

ISC feature terminates video stream.

ISC switches to ON state.

ISC feature displays a notification that the battery's state of charge is too low to support the feature.
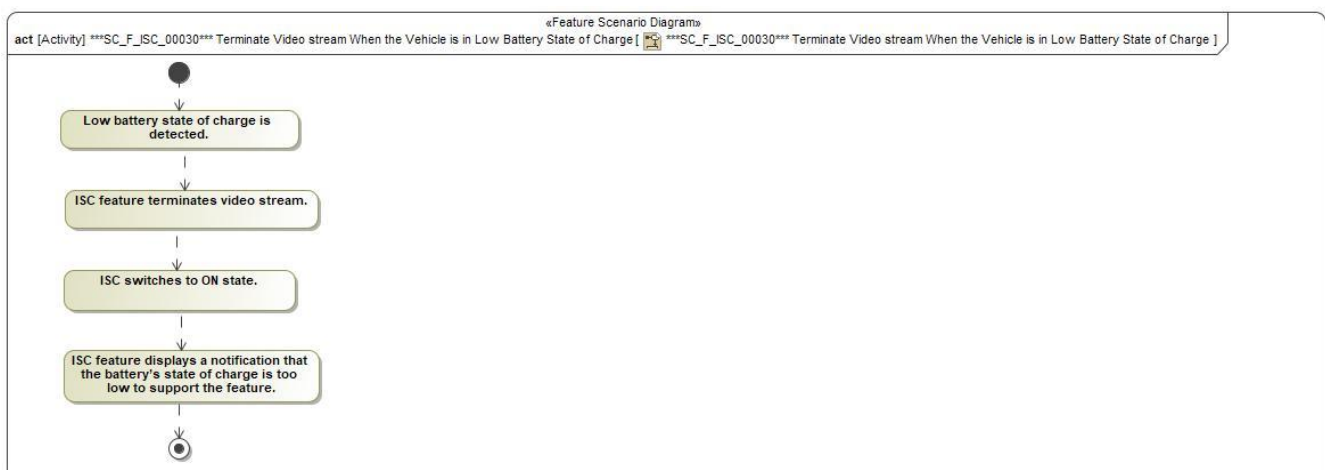
Figure 12: ***SC_F_ISC_00030* Terminate Video stream When the Vehicle is in Low Battery State of Charge**

SC_F_ISC_00032 Terminate Video Stream when Video Error Detected
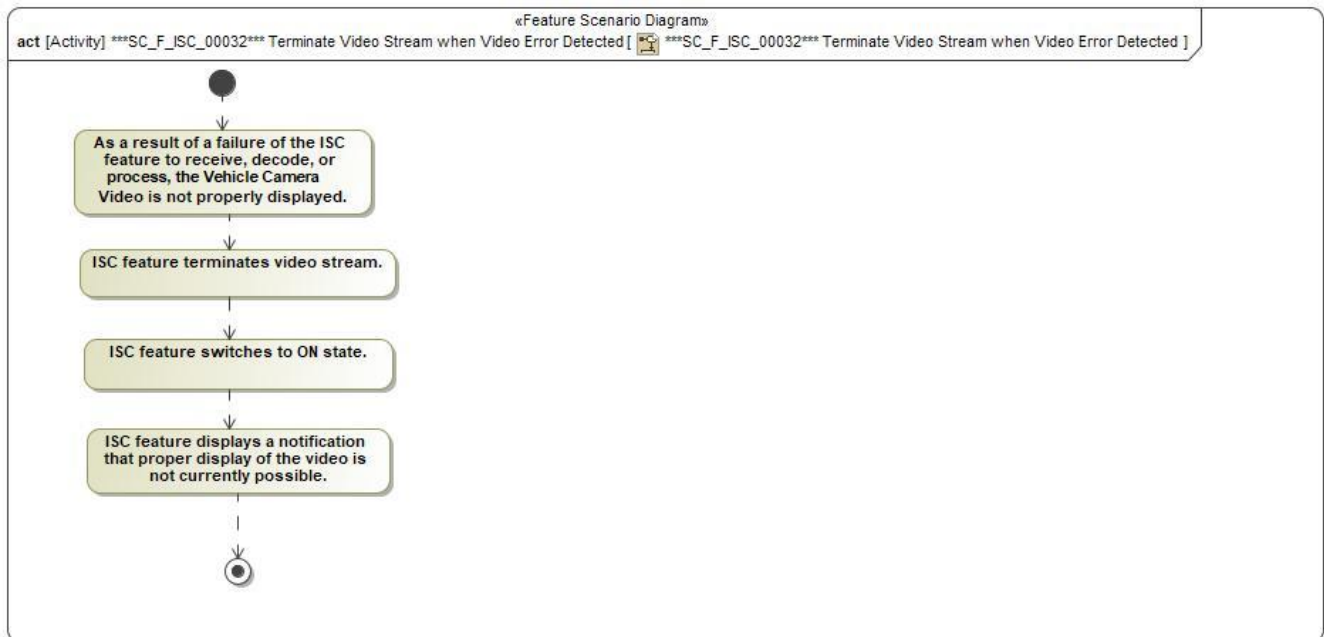
Figure 13: ***SC_F_ISC_00032* Terminate Video Stream when Video Error Detected**

SC_F_ISC_00033 Terminate Video Stream when Cameras View Not Available/ Faulted
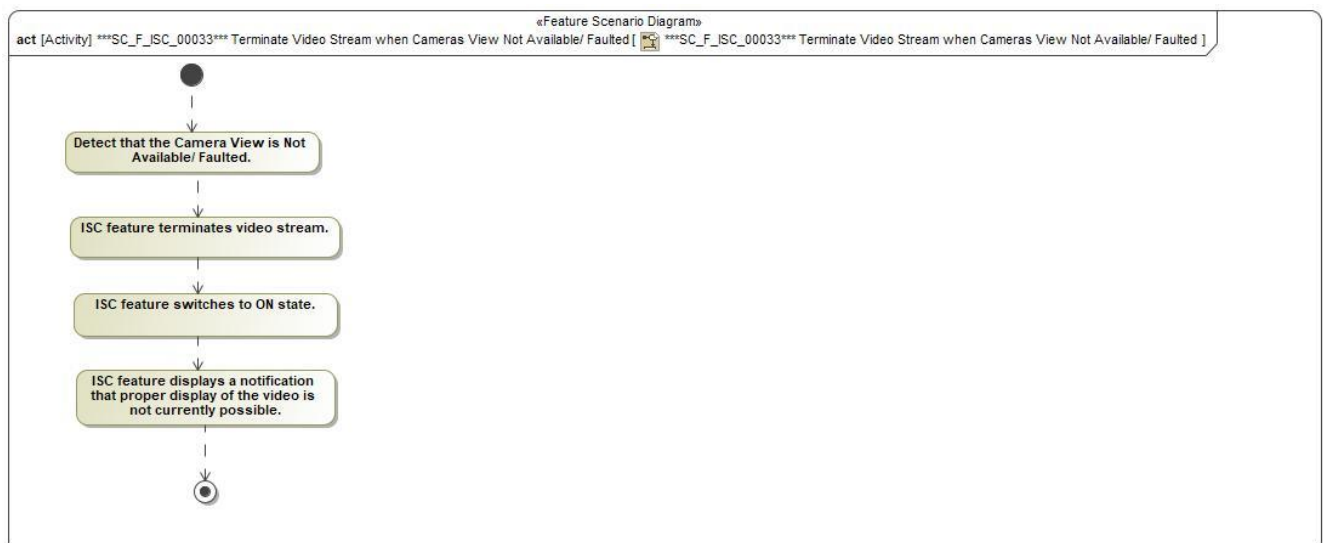
Figure 14: ***SC_F_ISC_00033* Terminate Video Stream when Cameras View Not Available/ Faulted**

SC_F_ISC_00034 Terminate Video Stream When the Vehicle Subscription are not Available

«Feature Scenario Diagram»
act [Activity] ***SC_F_ISC_00034*** Terminate Video Stream When the Vehicle Subscription are not Available [***SC_F_ISC_00034*** Terminate Video Stream When the Vehicle Subscription are not Available]

Vehicle subscription is not available.

ISC feature displays a notification that proper display of the video is not currently possible.
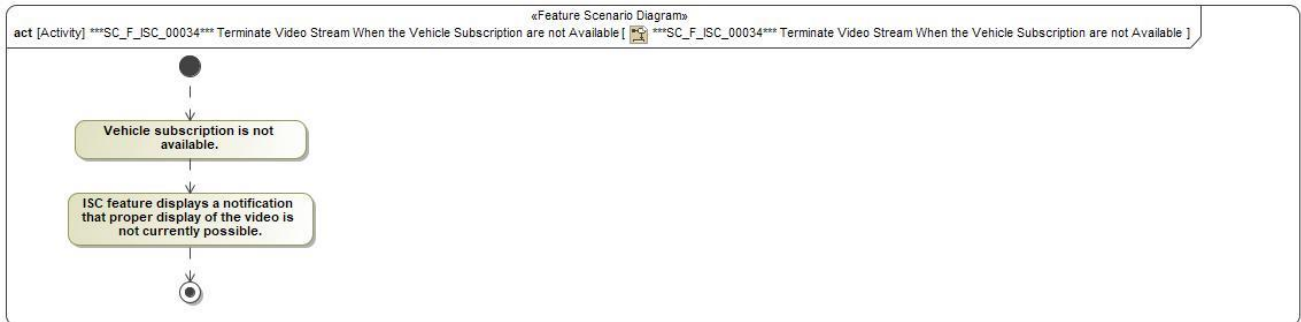
Figure 15: ***SC_F_ISC_00034* Terminate Video Stream When the Vehicle Subscription are not Available**

SC_F_ISC_00038 Terminate Video Replay on APIM Display at User Request

«Feature Scenario Diagram»
act [Activity] ***SC_F_ISC_00038*** Terminate Video Replay on APIM Display at User Request [***SC_F_ISC_00038*** Terminate Video Replay on APIM Display at User Request]

Video is playing on the APIM display.

The user request that the video playing on the APIM display terminates via a softbutton press on the APIM display.

The video stops playing.
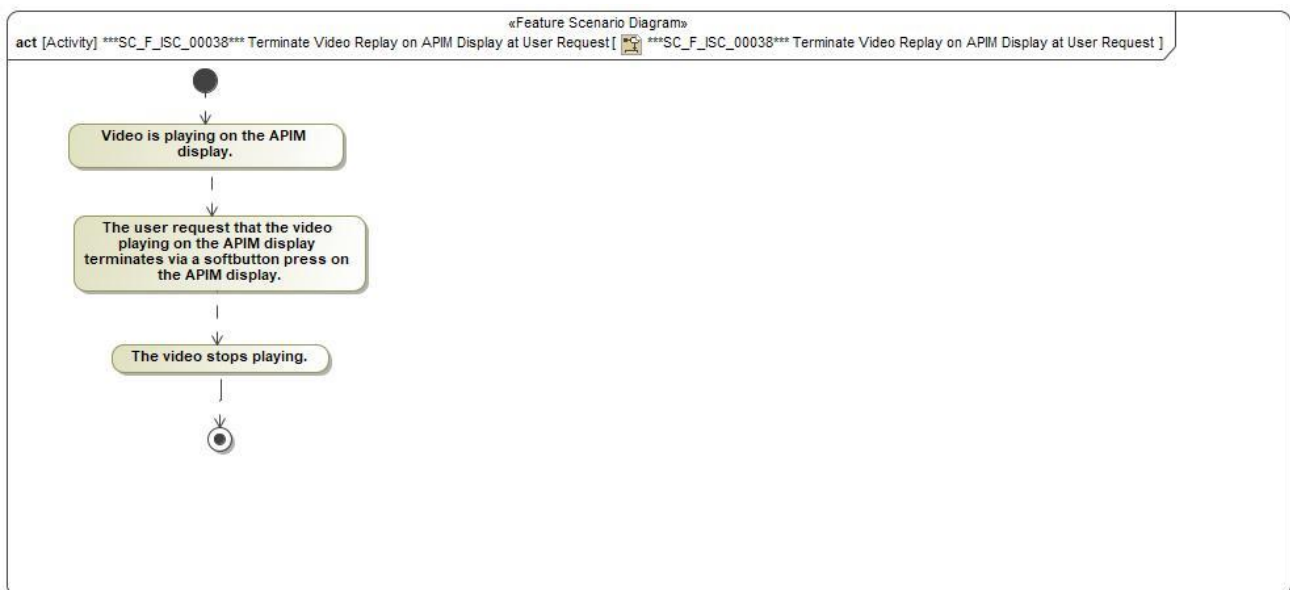
Figure 16: ***SC_F_ISC_00038* Terminate Video Replay on APIM Display at User Request**

SC_F_ISC_00039 Terminate Video Stream on APIM Display at End of Video Clip

«Feature Scenario Diagram»
act [Activity] ***SC_F_ISC_00039*** Terminate Video Stream on APIM Display at End of Video Clip [***SC_F_ISC_00039*** Terminate Video Stream on APIM Display at End of Video Clip]

A video clip is streaming on the APIM display.

The end of the video is detected and the video streaming terminated.
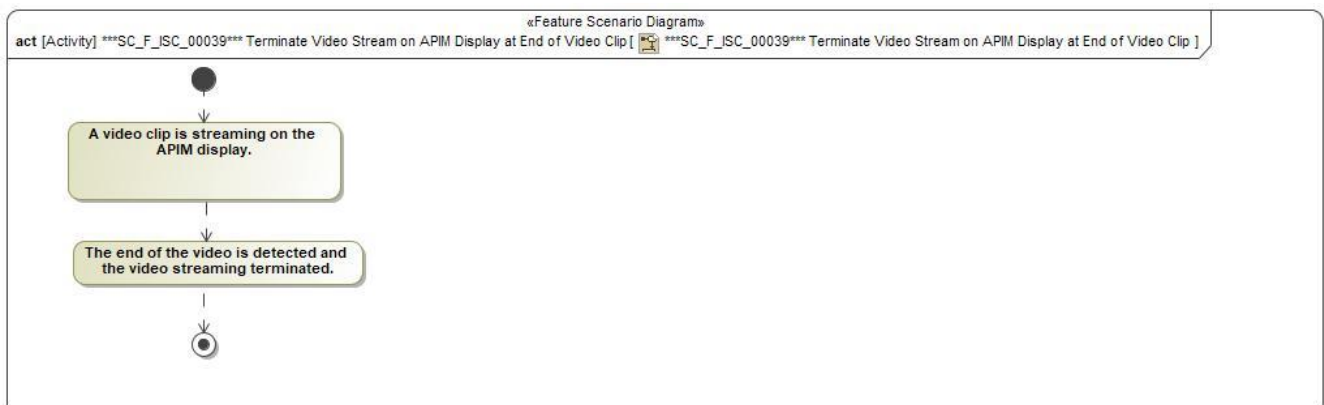
Figure 17: ***SC_F_ISC_00039*** Terminate Video Stream on APIM Display at End of Video Clip

ISC Scenarios - Overview

Figure 18: ISC Scenarios - Overview

4.4 Decision Tables

5 FEATURE REQUIREMENTS

5.1 Functional Requirements

ISC_FR_3 ISC Feature - Enable/Disable

At user request using a soft button (on the On board HMI display) the ISC Feature shall allow enabling/disabling of the ISC Feature.

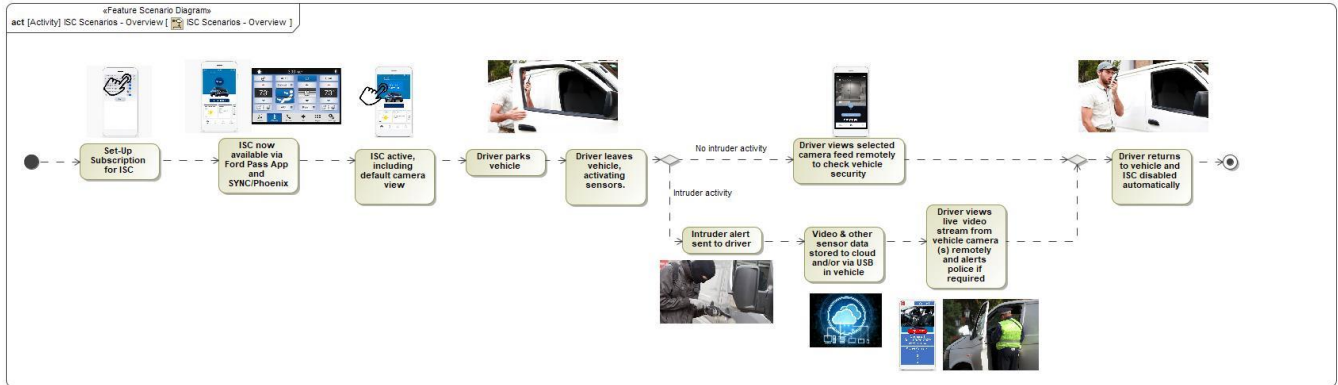| Requirement ID: ISC_FR_3					
Rationale	This is how the ISC Feature is enabled/disabled				
Acceptance Criteria	See Test Plan				
Notes					
Source			**Owner**		I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• AR Remotely Monitor Vehicle		**V&V Method**		See Test Plan
Type		**Priority**	1 - High	**Status**	In-Progress
Req. Template Version 6.0					End of Requirement

ISC_FR_8 Video Image Quality

When streaming video the ISC Feature shall provide a suitable video image quality and coverage under a range of lighting conditions

Requirement ID: ISC_FR_8					
Rationale	At least acceptable video quality is required, even in the dark				
Acceptance Criteria	See Test Plan				
Notes					
Source			**Owner**		I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• AR Remotely Monitor Vehicle		**V&V Method**		See Test Plan
Type		**Priority**	1 - High	**Status**	In-Progress
Req. Template Version 6.0					End of Requirement

ISC_FR_11 Terminate Video Stream

When any of the below reasons is met:
- User terminates video stream
- Vehicle Battery is in a Low State of Charge
- Communication lost
- Mobile unable to decode the stream video
- Key ON
- Camera view unavailable
- Vehicle Modules are Occupied
- No vehicle subscription

the ISC Feature shall terminate the video stream.

Requirement ID: ISC_FR_11					
Rationale	These condtions must be met to terminate the video streaming				
Acceptance Criteria	See Test Plan				
Notes					
Source			**Owner**		I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• AR Remotely Monitor Vehicle		**V&V Method**		See Test Plan
Type		**Priority**	2 - Medium	**Status**	In-Progress

Req. Template Version	6.0	End of Requirement

ISC_FR_16 Settings - Video Quality

When the ISC App is enabled the ISC Feature shall allow the user to adjust the video stream quality if needed.

Requirement ID: ISC_FR_16				
Rationale	To adjust the video quality as this may affect the length of video clips recorded and/or the communication speed to the ISC Cloud			
Acceptance Criteria	See Test Plan			
Notes				
Source			Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• Remotely Monitor Vehicle		V&V Method	See Test Plan
Type		Priority	3 - Low	Status	In-Progress
Req. Template Version	6.0			End of Requirement

ISC_FR_19 Settings - Change Vehicle

By using a soft button on the ISC App the ISC Feature shall allow the user to switch to the desired vehicle after terminating the ISC feature for the current vehicle.

Requirement ID: ISC_FR_19				
Rationale	To allow the user to switch to the video streaming from another vehicle			
Acceptance Criteria	See Test Plan			
Notes				
Source			Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• Remotely Monitor Vehicle		V&V Method	See Test Plan
Type		Priority	2 - Medium	Status	In-Progress
Req. Template Version	6.0			End of Requirement

ISC_FR_25 Tutorial - First Time Use

When user launches feature for the first time the ISC Feature shall display the operated tutorial on the ISC App.

Requirement ID: ISC_FR_25				
Rationale	The user may need to watch a tutorial video on the ISC Feature - when the Ford Pass App is used for the first time.			
Acceptance Criteria	See Test Plan			
Notes				
Source			Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• Remotely Monitor Vehicle		V&V Method	See Test Plan
Type		Priority	3 - Low	Status	In-Progress
Req. Template Version	6.0			End of Requirement

ISC_FR_26 Tutorial - Skip

When user launches feature for the first time the ISC Feature shall allow the user to skip viewing the full operated tutorial when it is displayed on the ISC App.

Requirement ID: ISC_FR_26	
Rationale	The user may not need to watch the tutorial video
Acceptance Criteria	See Test Plan
Notes	

Source		Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• **AR** Remotely Monitor Vehicle	V&V Method	See Test Plan
Type		Priority	3 - Low	Status	In-Progress

Req. Template Version   6.0   End of Requirement

ISC_FR_27 Tutorial - User Request

When requested by the user the ISC Feature shall allow the user to launch the tutorial upon request.

Requirement ID: ISC_FR_27			
Rationale	The user may need to watch a tutorial video on the ISC Feature		
Acceptance Criteria	See Test Plan		
Notes			
Source		Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• **AR** Remotely Monitor Vehicle	V&V Method	See Test Plan
Type		Priority	3 - Low	Status	In-Progress

Req. Template Version   6.0   End of Requirement

ISC_FR_28 Stored Video - Select by Date/Time

When requested by the user the ISC Feature shall allow the user to select a video stored by the date/time of recording

Requirement ID: ISC_FR_28			
Rationale	The user may wish to view stored videos recorded at certain times on the Ford Pass App		
Acceptance Criteria	See Test Plan		
Notes			
Source		Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• **AR** Remotely Monitor Vehicle	V&V Method	See Test Plan
Type		Priority	1 - High	Status	In-Progress

Req. Template Version   6.0   End of Requirement

ISC_FR_29 Stored Video - Play/Terminate

When requested by the user the ISC Feature shall allow the user to PLAY/PAUSE/STOP a selected stored video

Requirement ID: ISC_FR_29			
Rationale	The user may wish to play a selected video and control the streaming on the Ford Pass App		
Acceptance Criteria	See Test Plan		
Notes			
Source		Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)
Source Req.	• **AR** Remotely Monitor Vehicle	V&V Method	See Test Plan
Type		Priority	1 - High	Status	In-Progress

Req. Template Version   6.0   End of Requirement

ISC_FR_30 Stored Video - Delete

When requested by the user the ISC Feature shall allow the user to delete a selected stored video (or group of videos)

Requirement ID: ISC_FR_30

Rationale	By deleting videos more storage space will become available			
Acceptance Criteria	See Test Plan			
Notes				
Source		Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)	
Source Req.	• Remotely Monitor Vehicle	V&V Method	See Test Plan	
Type		Priority	3 - Low	Status	In-Progress

Req. Template Version   6.0   End of Requirement

ISC_FR_31 Stored Video - Metadata

When streaming video the ISC Feature shall store metadata such as date/time and type of threat event

Requirement ID: ISC_FR_31				
Rationale	To securely store video and metadata to the USB memory device for later retrieval			
Acceptance Criteria	See Test Plan			
Notes				
Source		Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)	
Source Req.	• Remotely Monitor Vehicle	V&V Method	See Test Plan	
Type		Priority	1 - High	Status	In-Progress

Req. Template Version   6.0   End of Requirement

ISC_FR_32 Stored Video - Capability USB & Cloud

Before activation the ISC Feature shall be able to inset a Onboard storage into the USB-hub and have capability to store video to the cloud (market dependent, eg not China)

Requirement ID: ISC_FR_32				
Rationale	The USB memory device and cloud storage (market dependent) must be usable			
Acceptance Criteria	See Test Plan			
Notes				
Source		Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)	
Source Req.	• Remotely Monitor Vehicle	V&V Method	See Test Plan	
Type		Priority	1 - High	Status	In-Progress

Req. Template Version   6.0   End of Requirement

ISC_FR_33 Stored Video - Manage Storage

During the video recording process the ISC Feature shall be able to manage the data storage, eg by overwriting data

Requirement ID: ISC_FR_33				
Rationale	To ensure that video can always be recorded, even as the available memory becomes full			
Acceptance Criteria	See Test Plan			
Notes				
Source		Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)	
Source Req.	• Remotely Monitor Vehicle	V&V Method	See Test Plan	
Type		Priority	1 - High	Status	In-Progress

Req. Template Version   6.0   End of Requirement

ISC_FR_35 Stored Video - USB - PC Playback

At user request the ISC Feature shall allow playback of non-encrypted video recorded on the Onboard storage via a PC (computer). Note playback of encrypted video will need a key.

Requirement ID: ISC_FR_35					
Rationale	The user may wish to view videos stored on a USB memory device on a PC				
Acceptance Criteria	See Test Plan				
Notes					
Source			Owner	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)	
Source Req.	• Remotely Monitor Vehicle		V&V Method	See Test Plan	
Type		Priority	2 - Medium	Status	In-Progress
Req. Template Version 6.0					End of Requirement

5.1.1 Error Handling

No Error Handling Requirements specified.

5.2 Non-Functional Requirements

5.2.1 Security

Allow launch of demo videos on user request via mobile device

Requirement ID:					
Rationale					
Acceptance Criteria					
Notes					
Source			Owner		
Source Req.	• Proj-AR:14 Improve Security		V&V Method		
Type		Priority		Status	
Req. Template Version 6.0					End of Requirement

5.2.2 Reliability

No Reliability Requirements specified.

5.2.3 Performance

Alarm user of intrusion into vehicle using perimeter alarm as trigger

Requirement ID:					
Rationale					
Acceptance Criteria					
Notes					
Source			Owner		
Source Req.	• Proj-AR:14 Improve Security		V&V Method		
Type		Priority		Status	
Req. Template Version 6.0					End of Requirement

ISC_FR_34 Stored Video - Capacity

When a valid subscription is in place the ISC Feature shall have a video/data storage capacity of: TBE GB

Requirement ID: ISC_FR_34

Rationale	Enough capacity must be available to prevent important video being over-written or deleted			
Acceptance Criteria	See Test Plan			
Notes				
Source		**Owner**	I Gupta (igupta1), M Wohlfahter (mwohlfah), C Minous (cminous), S Dogiparthi (sdogipar)	
Source Req.	• ☐ Remotely Monitor Vehicle	**V&V Method**	See Test Plan	
Type		**Priority**	2 - Medium	**Status**	In-Progress

Req. Template Version 6.0   End of Requirement

5.3 HMI Requirements

Allow user to view cameras on vehicle remotely using mobile device to trigger

Requirement ID:			
Rationale			
Acceptance Criteria			
Notes			
Source		**Owner**	
Source Req.	• ☐ Proj-AR:14 Improve Security	**V&V Method**	
Type		**Priority**		**Status**	

Req. Template Version 6.0   End of Requirement

5.4 Other Requirements

5.4.1 Design Requirements

Not supported by MagicDraw report generation.

5.4.2 Manufacturing Requirements

No Manufacturing Requirements specified.

5.4.3 Service Requirements

No Service Requirements specified.

5.4.3.1 Cloud Connectivity Data Analytics Requirements

5.4.4 After Sales Requirements

No After Sales Requirements specified.

5.4.5 Process Requirements

No Process Requirements specified.

6 FUNCTIONAL SAFETY

6.1 System Behaviors for HARA

ID	Name	Description
	SB06: Disable Integrated Security Cameras	Disable sentine feature.
	SB04: Record	Recording activity.
	SB13: Provide Remote Start message while Streaming	Feature provides a pop up message of " Use remote start to continue viewing" on the Mobile Device when the Vehicle battery SoC is low
	SB08: Provide Video Streaming request to the vehicle	Feature communicate the request for video streaming to the Vehicle.
	SB10: Provide Low Battery Conditions message	Feature provides the "Low Vehicle Battery" pop up message on to the Mobile Device if the battery SoC is low
	SB03: Notify Customer of Intrusion	Notifying customer about intrusion event.
	SB11: Provide Communication Fault message	Feature provides a "communication fault" pop up message on to the Mobile Device when there is a poor cellular connectivity or no connectivity
	SB01: Enable Integrated Security Cameras	Enable sentinel feature.
	SB07: Modify Integrated Security Cameras Settings	Modifying sentinel settings.
	SB05: Store Recording	Storing recordings.
	SB02: Detect Vehicle Intrusion	Detecting vehicle intrusion.
	SB12: Provide Feature not enabled message	Vehicle sends a message of "Feature not enabled" as a pop up message to the Mobile Device when the feature is not enabled on the APIM by the user
	SB09: Provide Video Streaming from the Vehicle Cameras to the User	Feature provides the video streaming from the Vehicle Cameras to the Mobile Device

Table 10: System Behaviors for HARA

6.2 Functional Safety Assumptions

No Safety Assumptions specified

6.3 Safety Goals

ID	Goal		
	Goal Name	Prevent Hazard (Example)	
	Description		
	Safety Goal Concept	Safety Goal Concept: Warning & Recovery Concept:	
	ASIL		**FTTI**	
	Related FSR IDs	•	

Table 11: Functional Safety Goals

6.4 Functional Safety Requirements

6.4.1 Safety Goal: Prevent Hazard (Example)

Name: Prevent Hazard (Example)
Purpose:
Text:
ASIL:

6.4.1.1 Safety Goal Concept
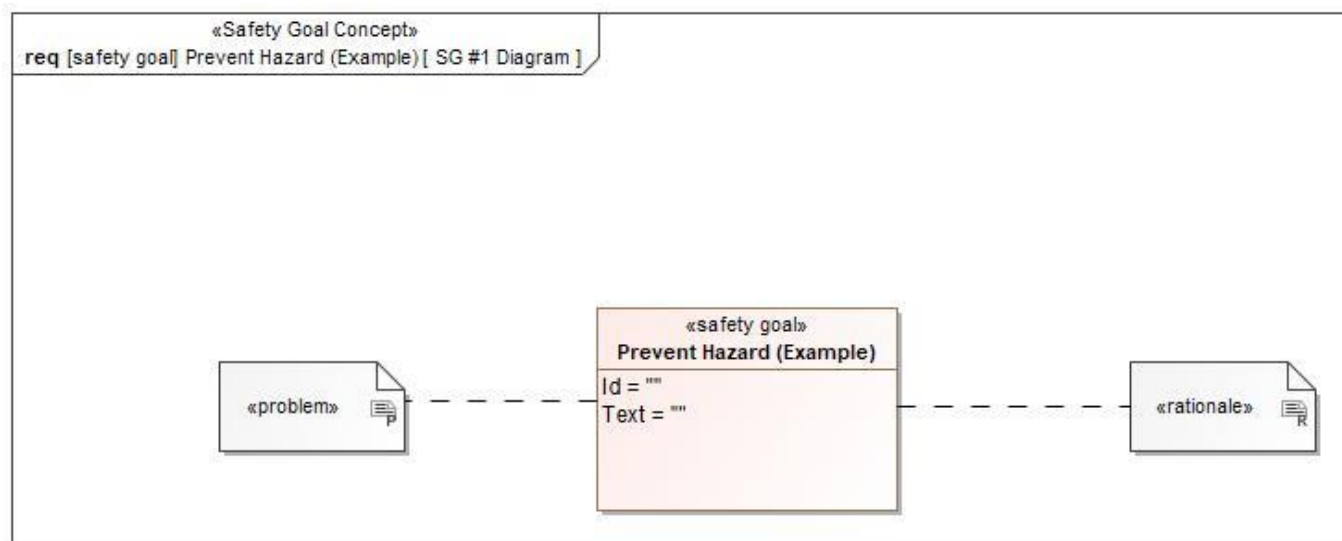
Figure 1: SG #1 Diagram – Prevent Hazard (Example)

Note: The authoritative source for the Safety Goals is document "FFSD 02 Hazard Analysis and Risk Assessment". The documentation of Safety Goals in this chapter (In the Argumentation for Safety Goal achievement) is for information purposes only.
The authoritative source for the Functional Safety Requirements is section 2.1.x.3: of this document. The documentation of Functional Safety Requirements in the following chapter (complete or summarised) is for information purposes only.

6.4.1.2 Warning and Recovery Concept

«Warning and Recovery Concept»
req [safety goal] Prevent Hazard (Example) [W&RC #1 Diagram]
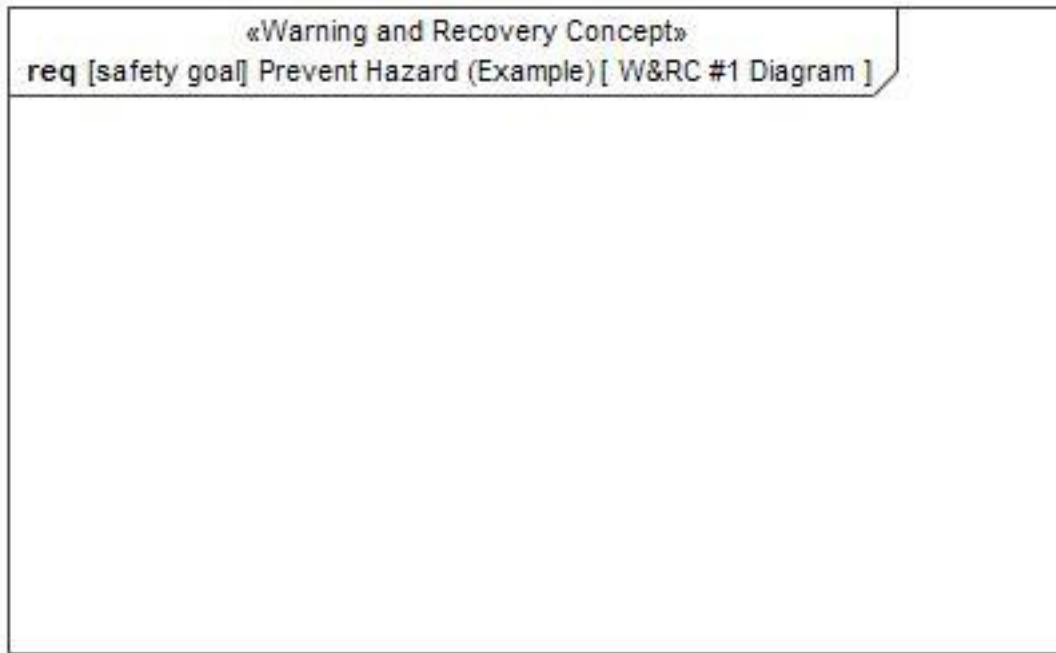
Figure 19: W&RC #1 Diagram – Prevent Hazard (Example)

6.4.1.3   FSRs for - Prevent Hazard (Example)

req [Package] Functional Safety Requirements [FSR Diagram]

«safety goal»
Prevent Hazard (Example)
Id = ""
Text = ""

| «deriveReqt»

«functional safety requirement»
First FSR
Category = Safety Related Function
Id = ""
Text = ""

AD «ASIL decompose»   **AD** «ASIL decompose»

IR «independenceReqt»

«functional safety requirement»
Main Function FSR
ASIL = QM(A)
Category = Safety Related Function
Id = ""
Text = ""

«functional safety requirement»
Main and Monitor Independence
Category = Safety Related Function
Id = ""
Text = ""

«functional safety requirement»
Monitor Function FSR
ASIL = A(A)
Category = Safety Related Function
Id = ""
Text = ""

Figure 20. Prevent Hazard (Example)

First FSR

Related to:
- Safe States:
  - [Safe State #1](#)
- Operating Modes:
  - [Armed](#)

Requirement ID:					
Purpose					
V&V Acceptance Criteria					
Notes					
Source			**Owner**		
Source Req.	• Prevent Hazard (Example)		**V&V Method**		
Type	N/A	**Priority**	N/A	**Status**	
ASIL		**Category**	Safety Related Function	**Fault Handling Time**	N/A
[Req. Template](#) Version 6.0					End of Requirement

Main and Monitor Independence

Related to:
- Safe States:
  - [Safe State #1](#)
- Operating Modes:
  - [Armed](#)

Requirement ID:					
Purpose					
V&V Acceptance Criteria					
Notes					
Source			**Owner**		
Source Req.	• Prevent Hazard (Example)		**V&V Method**		
Type	N/A	**Priority**	N/A	**Status**	
ASIL		**Category**	Safety Related Function	**Fault Handling Time**	N/A
[Req. Template](#) Version 6.0					End of Requirement

Main Function FSR

Related to:
- Safe States:
  - [Safe State #1](#)
- Operating Modes:
  - [Armed](#)

Requirement ID:		
Purpose		
V&V Acceptance Criteria		
Notes		
Source	**Owner**	

Source Req.	• ▨ Prevent Hazard (Example)			V&V Method	
Type	N/A	Priority	N/A	Status	
ASIL	QM(A)	Category	Safety Related Function	Fault Handling Time	N/A

Req. Template Version 6.0 — End of Requirement

Monitor Function FSR

Related to:
- Safe States:
  - Safe State #1
- Operating Modes:
  - Armed

Requirement ID:					
Purpose					
V&V Acceptance Criteria					
Notes					
Source				Owner	
Source Req.	• ▨ Prevent Hazard (Example)			V&V Method	
Type	N/A	Priority	N/A	Status	
ASIL	A(A)	Category	Safety Related Function	Fault Handling Time	N/A

Req. Template Version 6.0 — End of Requirement

6.4.2 Derivation of Functional Safety Requirements on Assumptions

No Functional Safety Requirements tracing to Assumptions specified.

6.4.3 ASIL Decomposition of Functional Safety Requirements

6.4.3.1 Decomposition of Functional Safety Requirement

Input FSR		First FSR
Decomposition Rationale		
Method for Decomposition		A -> A(A) + QM(A)
FSR 1 after Decomposition	FSR ID	
	FSR Title	Monitor Function FSR
	ASIL	A(A)
	Rationale	
	Satisfied by	
FSR 2 after Decomposition	FSR ID	
	FSR Title	Main Function FSR
	ASIL	QM(A)
	Rationale	
	Satisfied by	

Input FSR	First FSR		
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	Main and Monitor Independence	
	ASIL		
	Rationale		

7 CYBERSECURITY

7.1 Security Goals

ID	Goal

Table 12: Cybersecurity Goals

7.2 Cybersecurity Requirements

8   ARCHITECTURE

8.1 Functional Decomposition
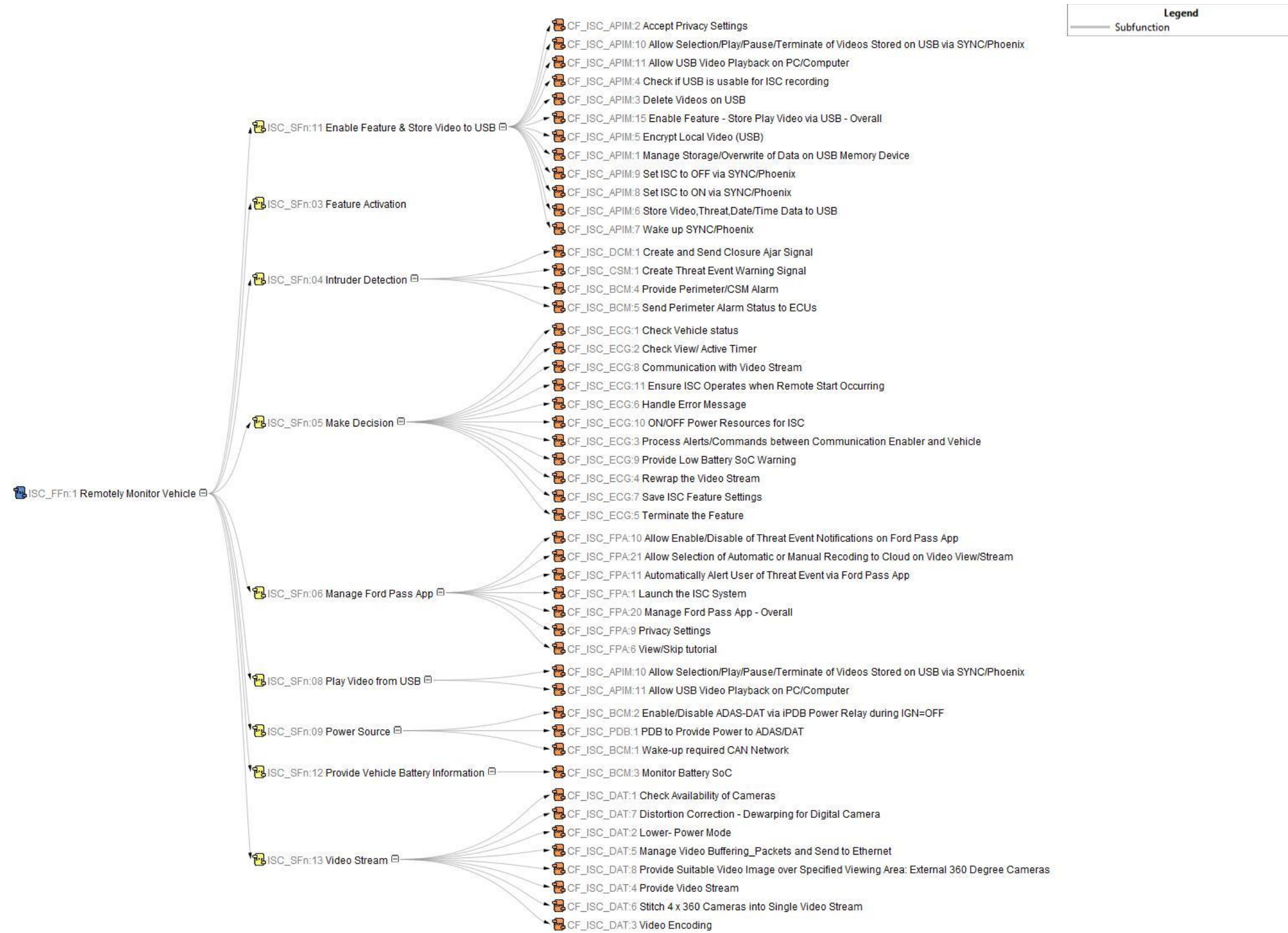
Figure 21: Functional Decomposition

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GIS1 Item Number: 27.60/35

GIS2 Classification: Confidential   *Copyright ©2022, Ford Motor Company*

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Date Issued: 2022/05/16
Date Revised: 2022/05/16

8.1.1 Functions

8.2 Logical Architecture

Figure 22: Logical Architecture Structure - IBD

8.2.1 Logical Elements

Element Name	Description	Allocated Functions	Comments
Accept Privacy Settings	Logical Hardware to Accept Privacy Settings	• Enable Feature & Store Video to USB	
Allow Deletion of Videos on USB	Logical Hardware to Allow Deletion of Videos on USB	• Enable Feature & Store Video to USB	
Allow Enable/Disable of Threat Event Notifications on App	Logical Hardware to Allow Enable/Disable of Threat Event Notifications on App	• Manage Ford Pass App	
Allow Selection/Play of Video Stored on USB	Logical Hardware to Allow Selection/Play of Video Stored on USB	• Play Video from USB	
Allow USB Playback on PC	Logical Hardware to Allow USB Playback on PC	• Play Video from USB	
Automatically Alert User of Threat Event	Logical Hardware to Automatically Alert User of Threat Event	• Manage Ford Pass App	

Element Name	Description	Allocated Functions	Comments
Check Cameras Availability	Logical Hardware to Check Cameras Availability	• Video Stream	
Check if USB Usable for ISC Recording	Logical Hardware to Check if USB Usable for ISC Recording	• Enable Feature & Store Video to USB	
Check Vehicle Status	Logical Hardware to Check Vehicle Status	• Make Decision	
Check View / Active Timer	Logical Hardware to Check View / Active Timer	• Make Decision	
Communicaton Enabler & Store Video on Cloud	Logical Hardware to Communicaton Enabler & Store Video on Cloud		
Create and Send Closure Ajar Signal	Logical Hardware to Create and Send Closure Ajar Signal	• Intruder Detection	
Create Threat Event Warning Signal	Logical Hardware to Create Threat Event Warning Signal	• Intruder Detection	
Disable ISC When Battery Below Threshold	Logical Hardware to Disable ISC When Battery Below Threshold	• Make Decision	
Display ISC Status - ON/OFF	Logical Hardware to Display ISC Status - ON/OFF	• Manage Ford Pass App	
Display Popups	Logical Hardware to Display Popups	• Manage Ford Pass App	
Distortion Correction - Dewarping for Digital Cameras	Logical Hardware to Distortion Correction - Dewarping for Digital Cameras	• Video Stream	
Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	Logical Hardware to Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	• Enable Feature & Store Video to USB	
Enable/Disable ADAS/DAT via iPDB Power Relay During IGN=OFF	Logical Hardware to Enable/Disable ADAS/DAT via iPDB Power Relay During IGN=OFF		
Encrypt Local Video on USB	Logical Hardware to Encrypt Local Video on USB	• Enable Feature & Store Video to USB	
Ensure ISC Operates when Remote Start Occurring			
Forward ISC Quality Settings	Logical Hardware to Forward ISC Quality Settings		
Forward Systems Notifications	Logical Hardware to Forward Systems Notifications		
Handle Error Message	Logical Hardware to Handle Error Message	• Make Decision	
Indicate Recording: 2nd Row/Cargo Area	Logical Hardware to Indicate Recording: 2nd Row/Cargo Area	• Video Stream	
Indicate Recording: Front Row/Cabin	Logical Hardware to Indicate Recording: Front Row/Cabin	• Video Stream	

Element Name	Description	Allocated Functions	Comments
Intruder Detection	Logical Hardware to Intruder Detection	• Intruder Detection	
Launch ISC Feature	Logical Hardware to Launch ISC Feature	• Manage Ford Pass App	
Lower - Power Mode	Logical Hardware to Lower - Power Mode	• Video Stream	
Make Decision	Logical Hardware to Make Decision	• Make Decision	
Manage and Save Settings	Logical Hardware to Manage and Save Settings	• Manage Ford Pass App	
Manage ISC Function	Logical Hardware to Manage ISC Function	• Manage Ford Pass App	
Manage Storage/Overwrite of Data on USB Memory Device	Logical Hardware to Manage Storage/Overwrite of Data on USB Memory Device	• Enable Feature & Store Video to USB	
Manage Video Buffering Packets and Send to Ethernet	Logical Hardware to Manage Video Buffering Packets and Send to Ethernet	• Video Stream	
Monitor Battery SoC	Logical Hardware to Monitor Battery SoC	• Make Decision	
Power Source	Logical Hardware to Power Source	• Power Source	
Privacy settings	Logical Hardware to Privacy settings	• Manage Ford Pass App	
Process Requests/Commands between ISC App and Vehicle	Logical Hardware to Process Requests/Commands between ISC App and Vehicle	• Make Decision	
Provide Low Battery SoC Warning	Logical Hardware to Provide Low Battery SoC Warning	• Make Decision	
Provide Perimeter/CSM Alarm	Logical Hardware to Provide Perimeter/CSM Alarm	• Intruder Detection	
Provide Power to ADAS/DAT	Logical Hardware to Provide Power to ADAS/DAT	• Power Source	
Provide Suitable Video Image Over Specified Viewing Area: 2nd Row/Cargo Area	Logical Hardware to Provide Suitable Video Image Over Specified Viewing Area: 2nd Row/Cargo Area	• Video Stream	
Provide Suitable Video Image over Specified Viewing Area: External 360 Degree Cameras	Logical Hardware to Provide Suitable Video Image over Specified Viewing Area: External 360 Degree Cameras	• Video Stream	
Provide Suitable Video Image Over Specified Viewing Area: Front Row/Cabin	Logical Hardware to Provide Suitable Video Image Over Specified Viewing Area: Front Row/Cabin	• Video Stream	
Provide Vehicle Battery Information	Logical Hardware to Provide Vehicle Battery Information	• Provide Vehicle Battery Information	

Element Name	Description	Allocated Functions	Comments
Provide Video Stream	Logical Hardware to Provide Video Stream	• Video Stream	
Rewrap the Video Stream	Logical Hardware to Rewrap the Video Stream	• Make Decision	
Save ISC Feature Settings	Logical Hardware to Save ISC Feature Settings	• Make Decision	
Save ISC Feature Status	Logical Hardware to Save ISC Feature Status		
Send Perimeter Alarm Status to ECUs	Logical Hardware to Send Perimeter Alarm Status to ECUs	• Intruder Detection	
Send Video to USB	Logical Hardware to Send Video to USB	• Enable Feature & Store Video to USB	
Set ISC to OFF via SYNC/Phoenix (Disable)	Logical Hardware to Set ISC to OFF via SYNC/Phoenix (Disable)	• Enable Feature & Store Video to USB	
Set ISC to ON via SYNC/Phoenix (Enable)	Logical Hardware to Set ISC to ON via SYNC/Phoenix (Enable)	• Enable Feature & Store Video to USB	
Stitch 4x360 Cameras into Single Video Stream	Logical Hardware to Stitch 4x360 Cameras into Single Video Stream	• Video Stream	
Switch on IR Lights for Interior Cameras: Front Row/Cabin	Logical Hardware to Switch on IR Lights for Interior Cameras: Front Row/Cabin	• Enable Feature & Store Video to USB	
Synchronize Settings	Logical Hardware to Synchronize Settings	• Make Decision	
Terminate the Feature	Logical Hardware to Terminate the Feature	• Make Decision	
Validate ISC Feature	Logical Hardware to Validate ISC Feature		
Video Encoding	Logical Hardware to Video Encoding	• Video Stream	
Video Stream	Logical Hardware to Video Stream	• Video Stream	
View/Skip Tutorial	Logical Hardware to View/Skip Tutorial	• Manage Ford Pass App	
Wake Up Required Network	Logical Hardware to Wake Up Required Network	• Power Source	
Wake up SYNC/Phoenix	Logical Hardware to Wake up SYNC/Phoenix	• Enable Feature & Store Video to USB	

Table 13: Logical Elements

8.2.2 Logical Interfaces

Interface	Direction	Description	Value Range
LSG_ISC_APIMWakeUp	Make Decision To Enable Feature & Store/Play Video on USB & Play	To wake-up the APIM (SYNC/Phoenix)	

Interface	Direction	Description	Value Range
	Audio Deterrent (where fitted)		
LSG_ISC_BatterySize	Provide Vehicle Battery Information To Make Decision	Used to provide the vehicle Battery Size.	
LSG_ISC_BatterySoC	Provide Vehicle Battery Information To Make Decision	Used to provide the Battery SoC	
LSG_ISC_BatterySoCQualityFactor	Provide Vehicle Battery Information To Make Decision	Used to provide the vehicle Battery SoC QF (State of Charge Quality Factor).	
LSG_ISC_BatteryStateFault	Provide Vehicle Battery Information To Make Decision	Used to provide the vehicle Battery State Fault.	
LSG_ISC_BatteryTemperature	Provide Vehicle Battery Information To Make Decision	Used to provide the vehicle battery temperature.	
LSG_ISC_CamerasViewsStatus	Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted) To Make Decision	Used to provide information on the status of the camera views	
	Video Stream To Make Decision	Used to provide information on the status of the camera views	
LSG_ISC_DeleteVideoRequest	Manage ISC Function To Communicaton Enabler & Store Video on Cloud	Request to delete selected video(s) and associated metadata	
LSG_ISC_EncodedVideoStream	Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted) To Make Decision	Used to provide the encoded video stream.	
	Video Stream To Make Decision	Used to provide the encoded video stream.	
LSG_ISC_ListofAvailableViews	Communicaton Enabler & Store Video on Cloud To Manage ISC Function	Used to provide a list of the available camera views	
	Make Decision To Communicaton Enabler & Store Video on Cloud	Used to provide a list of the available camera views	
LSG_ISC_ListofAvaila	Communicaton Enabler & Store Video on Cloud	Used to request the list of available camera views.	

Interface	Direction	Description	Value Range
bleViewsRequest	To Make Decision		
	Manage ISC Function To Communicaton Enabler & Store Video on Cloud	Used to request the list of available camera views.	
LSG_ISC_ListofCloudVideosEventHistory	Communicaton Enabler & Store Video on Cloud To Manage ISC Function	List of videos stored on the cloud	
LSG_ISC_ListofPossibleViews	Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted) To Make Decision	Used to provide a list of possible camera views	
	Video Stream To Make Decision	Used to provide a list of possible camera views	
LSG_ISC_PublishRecordingStatus	Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted) To Make Decision	Used to provide the VRP status when recording is in progress	
LSG_ISC_PublishStreamStatus	Video Stream To Make Decision	Used to provide the information about the ongoing streams	
LSG_ISC_PublishStreamStatusReq	Make Decision To Video Stream	Used to request the information about the ongoing streams	
LSG_ISC_QualitySettings	Communicaton Enabler & Store Video on Cloud To Make Decision	Used to provide the quality settings of the video stream.	
	Make Decision To Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	Used to provide the quality settings of the video stream.	
	Make Decision To Video Stream	Used to provide the quality settings of the video stream.	
	Manage ISC Function To Communicaton Enabler & Store Video on Cloud	Used to provide the quality settings of the video stream.	
LSG_ISC_Relay Switch	Power Source To Video Stream	Used to control the power to the ADAS/DAT	

Interface	Direction	Description	Value Range
LSG_ISC_RemoteViewMode	Make Decision To Power Source	Used to notify that the vehicle is in a remote viewing mode while in a key of state	
LSG_ISC_RewrappedVideoStream	Communicaton Enabler & Store Video on Cloud To Manage ISC Function	Used for the rewrapped video stream from the ADAS/DAT	
	Make Decision To Communicaton Enabler & Store Video on Cloud	Used for the rewrapped video stream from the ADAS/DAT	
	Make Decision To Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	Used for the rewrapped video stream from the ADAS/DAT	
	Make Decision To Manage ISC Function	Used for the rewrapped video stream from the ADAS/DAT	
LSG_ISC_SourceStatus	Power Source To Make Decision	Used to provide status of ADAS/DAT module	
LSG_ISC_StartRecordingReq	Make Decision To Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	Used to send a start recording request to VRP	
LSG_ISC_Status ofAvailable Views	Communicaton Enabler & Store Video on Cloud To Manage ISC Function	Used to provide the status of the available camera views	
	Make Decision To Communicaton Enabler & Store Video on Cloud	Used to provide the status of the available camera views	
LSG_ISC_StopRecordingReq	Make Decision To Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	Used to send a stop recording request to VRP	
LSG_ISC_StopStreamReq	Make Decision To Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	Used to stop the ongoing stream	

Interface	Direction	Description	Value Range
	Make Decision To Video Stream	Used to stop the ongoing stream	
LSG_ISC_StreamingInformation	Communicaton Enabler & Store Video on Cloud To Make Decision	Used to provide the streaming credential information to ECG	
	Communicaton Enabler & Store Video on Cloud To Manage ISC Function	Used to provide the streaming credential information to ECG	
	Make Decision To Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	Used to provide the streaming credential information to ECG	
LSG_ISC_StreamingInformation_Resp	Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted) To Make Decision	Used to provide the streaming credential information to Cloud	
LSG_ISC_SubscriptionServices	Make Decision To Video Stream	Used to provide the status of subscription details	
	Video Stream To Make Decision	Used to provide the status of subscription details	
LSG_ISC_SystemMode	Make Decision To Video Stream	Used to provide the status of ISC feature ON/OFF	
LSG_ISC_SystemNotifications	Communicaton Enabler & Store Video on Cloud To Manage ISC Function	Used to provide the vehicle status (e.g. battery, ignition or connectivity etc..) when feature is in use	
	Make Decision To Communicaton Enabler & Store Video on Cloud	Used to provide the vehicle status (e.g. battery, ignition or connectivity etc..) when feature is in use	
LSG_ISC_SystemNotificationsRequest	Manage ISC Function To Communicaton Enabler & Store Video on Cloud	Used to request the vehicle status from ECG when the feature is in use	
LSG_ISC_SystemStatus	Communicaton Enabler & Store Video on Cloud To Manage ISC Function	Used to provide the system status of ISC feature ON/OFF	
	Make Decision To Communicaton Enabler & Store Video on Cloud	Used to provide the system status of ISC feature ON/OFF	

Interface	Direction	Description	Value Range
LSG_ISC_SystemStatusRequest	Manage ISC Function To Communicaton Enabler & Store Video on Cloud	Used to request the system status of ISC feature ON/OFF when feature in use	
LSG_ISC_TerminateISCFeatureRequest	Communicaton Enabler & Store Video on Cloud To Make Decision	Used to request the termination of the feature	
	Manage ISC Function To Communicaton Enabler & Store Video on Cloud	Used to request the termination of the feature	
LSG_ISC_TerminateVideoStream	Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted) To Make Decision	Used to terminate the video stream	
	Video Stream To Make Decision	Used to terminate the video stream	
LSG_ISC_TerminateVideoStreamRequest	Communicaton Enabler & Store Video on Cloud To Make Decision	Used to request termination of the video stream	
	Make Decision To Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	Used to request termination of the video stream	
	Make Decision To Video Stream	Used to request termination of the video stream	
	Manage ISC Function To Communicaton Enabler & Store Video on Cloud	Used to request termination of the video stream	
LSG_ISC_ThreatEvent	Intruder Detection To Make Decision	Signal indicating that a threat event has occurred at the vehicle	
LSG_ISC_VehicleCapability	Communicaton Enabler & Store Video on Cloud To Manage ISC Function	Used to provide the capability status of the VIN for ISC feature	
LSG_ISC_VehicleCapabilityRequest	Manage ISC Function To Communicaton Enabler & Store Video on Cloud	Used to request the capability status of the VIN for ISC feature	

Interface	Direction	Description	Value Range
LSG_ISC_VehicleWakeUp	Make Decision To Communicaton Enabler & Store Video on Cloud	Used to wake-up the vehicle by using wake-up SMS	
LSG_ISC_VehicleWakeUpRequest	Communicaton Enabler & Store Video on Cloud To Make Decision	Used to request the wake-up of the vehicle by using wake-up SMS	
LSG_ISC_VideoStreamRequest	Communicaton Enabler & Store Video on Cloud To Make Decision	Used to request the video stream	
	Make Decision To Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted)	Used to request the video stream	
	Make Decision To Video Stream	Used to request the video stream	
	Manage ISC Function To Communicaton Enabler & Store Video on Cloud	Used to request the video stream	
LSG_ISC_VideoStreamRequestStatus	Enable Feature & Store/Play Video on USB & Play Audio Deterrent (where fitted) To Make Decision	Used to provide the status of the video stream request	
	Video Stream To Make Decision	Used to provide the status of the video stream request	
LSG_ISC_WakeUpNetwork	Make Decision To Provide Vehicle Battery Information	Used to wake-up the required CAN network	

Table 14: Feature Interactions

9 TRACEABILITY MATRIX

Legend
↗ Refine

Use Cases
- **ISC LATEST**
  - UC1 - Launch ISC Feature
  - UC4 - Select & View Stored Video
  - UC5 - Access ISC Settings in FordPass
  - UC6 - Request to View the Tutorial
  - UC7 Enable ISC Feature
  - UC8 - Terminate ISC Feature
  - UC13 - Change the Desired Vehicle
  - SB01: Enable Integrated Security Came
  - SB02: Detect Vehicle Intrusion
  - SB03: Notify Customer of Intrusion
  - SB04: Record
  - SB05: Store Recording
  - SB06: Disable Integrated Security Came
  - SB07: Modify Integrated Security Came
  - SB08: Provide Video Streaming request
  - SB09: Provide Video Streaming from the
  - SB10: Provide Low Battery Conditions m
  - SB11: Provide Communication Fault mes
  - SB12: Provide Feature not enabled mes
  - SB13: Provide Remote Start message w

Requirement	UC1	UC4	UC5	UC6	UC7	UC8	UC13	SB01	SB02	SB03	SB04	SB05	SB06	SB07	SB08	SB09	SB10	SB11	SB12	SB13
1-Requirements [1-Concept Level]	1	5	1	3		1	1													
ISC_Attribute Requirements	1																			
AR Remotely Monitor Vehicle	1	1	↗																	
ISC_Functional Requirements		5	1	3		1	1													
ISC_FR_3 ISC Feature - Enable/Disable	1	1						↗												
ISC_FR_8 Video Image Quality																				
ISC_FR_11 Terminate Video Stream																				
ISC_FR_16 Settings - Video Quality	1	1		↗																
ISC_FR_19 Settings - Change Vehicle	1	1					↗													
ISC_FR_25 Tutorial - First Time Use	1	1		↗																
ISC_FR_26 Tutorial - Skip	1	1		↗																
ISC_FR_27 Tutorial - User Request	1	1		↗																
ISC_FR_28 Stored Video - Select by Date/Time	1	1	↗																	
ISC_FR_29 Stored Video - Play/Terminate	1	1	↗																	
ISC_FR_30 Stored Video - Delete	1	1	↗																	
ISC_FR_31 Stored Video - Metadata	1	1	↗																	
ISC_FR_32 Stored Video - Capability USB & Cloud																				
ISC_FR_33 Stored Video - Manage Storage																				
ISC_FR_34 Stored Video - Capacity																				
ISC_FR_35 Stored Video - USB - PC Playback	1	1	↗																	
ISC_Input Requirements																				

Legend
↗ DeriveReqt

ISC_Functional Requirements

	ISC_FR_3 ISC Feature - Enable/Disable	ISC_FR_8 Video Image Quality	ISC_FR_11 Terminate Video Stream	ISC_FR_16 Settings - Video Quality	ISC_FR_19 Settings - Change Vehicle	ISC_FR_25 Tutorial - First Time Use	ISC_FR_26 Tutorial - Skip	ISC_FR_27 Tutorial - User Request	ISC_FR_28 Stored Video - Select by Date/Time	ISC_FR_29 Stored Video - Play/Terminate	ISC_FR_30 Stored Video - Delete	ISC_FR_31 Stored Video - Metadata	ISC_FR_32 Stored Video - Capability USB & Cloud	ISC_FR_33 Stored Video - Manage Storage	ISC_FR_34 Stored Video - Capacity	ISC_FR_35 Stored Video - USB - PC Playback
ISC_Attribute Requirements	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AR Remotely Monitor Vehicle	16 ↙	↙	↙	↙	↙	↙	↙	↙	↙	↙	↙	↙	↙	↙	↙	↙

10 OPEN CONCERNS

ID	Concern Description	e-Tracker / Reference	Responsible	Status	Solution
1					

Table 15: Open Concerns *(Not supported by MagicDraw report generation)*

11 REVISION HISTORY

Rev. (revision)	Date	Description	Approved by	Responsible
FD1	2020-11-26	FD V1.0	**M. Wohlfarter**	**M. Wohlfarter**
FDV2.7 (V710)	2021-05-20	Updated requirements etc., especially for camera team	**M. Wohlfarter**	**M. Wohlfarter**
FD3.0 (Phoenix)	2021-06-17	Updated for Phoenix.	**I.Gupta**	**I.Gupta**
FD 3.2 (CDX747)	2021-10-20	Updated for ISC	**I.Gupta**	**I.Gupta**
FD 3.3(CDX747)	2021-10-21	Updates to format and variant descriptions	**I.Gupta**	**I.Gupta**
FD3.4(V710)	2021-11-10	Requirements updated – first ISC FD for V710	**M. Wohlfarter**	**M. Wohlfarter**
3.5(CDX747)	10-Nov-21	Udates for CDV747 variant	**I.Gupta**	**I.Gupta**
3.6(V710)	08-Feb-22	Latest assumptions for V710 variant	**M. Wohlfarter**	**M. Wohlfarter**
3.7(Phoenix)	9-Feb-2022	Updates for Phoenix variants	**I.Gupta**	**I.Gupta**
3.8(U718 China)	22-Feb-2022	Update for China variant	**I.Gupta**	**I.Gupta**
3.9(V710)	23-Feb-2022	Latest assumptions for V710 variant	**M. Wohlfarter**	**M. Wohlfarter**
4.0(Phoenix)	23-Feb-2022	Updates for Phoenix variants	**I.Gupta**	**I.Gupta**
4.1(V710)	12-Apr-2022	Latest assumptions for V710 variant	**M. Wohlfarter**	**M. Wohlfarter**
4.2(U71x FNA)	22-Apr-2022	Updates for U71x FNA variants	**I.Gupta**	**I.Gupta**
4.3(U71x China)	22-Apr-22	Updates for U718 China variant	**I.Gupta**	**I.Gupta**
4.4(U71x FNA)	16-May-22	Updates for U71x FNA variants	**I.Gupta**	**I.Gupta**
4.5(U718 China)	16-May-22	Updates for U718 China variant	**I.Gupta**	**I.Gupta**

12 APPENDIX

12.1 Definitions

Definition	Description
Kinesis	Amazon Kinesis Data Streams (KDS) is a massively scalable and durable real-time data streaming service. The data collected is available in milliseconds to enable real-time analytics use cases such as real-time dashboards, real-time anomaly detection, dynamic pricing, and more.
WebRTC	WebRTC is an open technology specification for enabling real-time communication (RTC) across browsers and mobile applications via simple APIs.

Table 16: Definitions used in this document

12.2 Abbreviations

Abbr.	Stands for
ADAS	Advanced Driver Assistance Systems
APCA & CCS Cloud	AppLink Policies Cloud Application & Customer Connectivity Settings
APP	Application (ie software application)
BCM	Body Control Module
CAN	Controller Area Network (CAN bus)
CSM	Central Security Module
CVFMA	Connected Vehicle Feature Management Application
DAT	Driver Assistance Technologies
DCM	Door Control Module
DDSM	Digital Data Storage Module
ECG	Enhanced Central Gateway
EM	Electro-Magnetic
FPA	Ford Pass App (application). The App on the mobile the customer uses to view different cameras available to monitor the vehicle
HU	Head Unit
iPDB	intelligent Power Distribution Box
IR	Infra Red, or Implementation Requirement
ISC	Integrated Security Camera
KDS	Kinesis Data Streams
LIN	Local Interconnect Network
MDVVC	Mobile Device Viewer for Vehicle Cameras
OTA	Over the Air Updates
RTC	Real Time Communications
RTP	Real-time Transport Protocol
SEM	Sensor Extension Module
SoC %	State of Charge percentage. Percentage of the vehicle battery charge that is available.
SoC QF	State of Charge Quality Factor. Determine the reliability of the vehicle battery information values.
SoC SF	State of Charge Sensor Fault. Determines the fault status of the state of charge sensor.
SSP	Subscription Services Platform
SYNC	In vehicle HMI including in car entertainment etc.
TCU	Telematics Control Unit
TMC	Transportation Mobility Cloud
US	Ultra Sonic
USB	Universal Serial Bus

Abbr.	Stands for
VOE	Video Over Ethernet
VPSM	Vehicle Power State Manager / Variable Power Moding system
VRP	Video Recording and Playback
VRS	Video RecordierService

Table 17: Abbreviations used in this document

Document ends here.