



**Research & Vehicle Technology**  
**“Infotainment Systems Product Development”**

**Feature – Integrated Dash Cam**

**APIM Phoenix Domain Controller**  
**Infotainment Subsystem Part Specific**  
**Specification (SPSS)**

Version 1.0

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**FORD CONFIDENTIAL**



## Revision History

Date	Version	Notes	
October 25, 2021	1.0	Initial Release	



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# 1 Overview

The Integrated Dash Camera feature allows the user to capture vehicle data and video from dash cam while driving and store the recorded data on removable on-board storage. The dash cam is mounted behind the vehicle windshield glass without the obstruction from interior components.

The user is able to configure the recording experience and playback the recordings via the center stack HMI.

## 1.1 Terminology and Abbreviations

The following table lists terminologies that are used in this document along with a brief description.

Term	Description
APIM	Auxiliary Protocol Interface Module
ARM	Augmented Reality Module
CAN	Controller Area Network
ECG	Enhanced Central Gateway
EVCN	Electric Vehicle Control Module
FNV3	Fully Networked Vehicle Architecture 3.0
GPS	Global Positioning System
HMI	Human Machine Interface
IDC	Integrated Dash Camera
PDC	Phoenix Domain Controller
SoA	Service Oriented Architecture



## 2 Architectural Design

### 2.1 IDCAM-CLD-REQ-408176/A-Integrated Dash Cam Interface Client

The Integrated Dash Cam Interface Client (IDCInterfaceClient) is responsible for providing HMI to the user.

### 2.2 IDCAM-CLD-REQ-408177/A-Integrated Dash Cam Server

The Integrated Dash Cam Server (IDCServer) is responsible for sending different recording and playback requests based on the user's input and receiving responses.

### 2.3 IDCAM-CLD-REQ-414961/A-Integrated Dash Cam Video Recording Client

The Integrated Dash Cam Video Recording Client (IDCVideoRecordingClient) is responsible for processing video recording and playback requests.

### 2.4 IDCAM-CLD-REQ-448141/A-Integrated Dash Cam Gear Position Server

The Integrated Dash Cam Gear Position Server (IDCGearPositionServer) is responsible for providing the gear position status.

### 2.5 IDCAM-CLD-REQ-454477/A-Ignition Status Server

The Ignition Status Server (IgnitionStatusServer) is responsible for providing the ignition status.

### 2.6 Physical Mapping of Classes

The table below shows an example of how the logical classes that make up the Integrated Dash Cam feature may be mapped into physical modules. This mapping example is specific to the FNV3 architecture and does not necessarily carryover to other carlines or vehicle architectures.

Logical Class	Physical Module (ECU)
IDCInterfaceClient	PDC
IDCServer	PDC
IDCVideoRecordingClient	PDC
IDCGearPositionServer	EVCN
IgnitionStatusServer	BCM

### 2.7 Logical Signal Mapping

The CAN signals mentioned throughout this document shall refer to the CAN signal's logical name. The logical names shall be mapped to their actual CAN signal names. Please use the table below to perform the mapping. The InfoCAN database file is the master file for the actual CAN signal names. Note: There may be cases where the actual CAN signal name is used in this documentation.

Logical Name	CAN Signal Name
FRCC_St	VehImpactCode_No2_Actl
GearLevelPosition_St	GearLvrPos_D_Actl
Ignition_St	Ignition_Status

### 2.8 IDCServer Interface

#### 2.8.1 IDCAM-IIR-REQ-408178/A-IDCServer \_Rx

**2.8.1.1 MD-REQ-454457/A-Ignition\_St**

Message Type: Status

This signal is used to receive ignition status from IgnitionStatusServer.

Name	Literals	Value	Description
Ignition_St	-	-	The status of ignition
	Unknown	0x0	
	Off	0x1	
	Accessory	0x2	
	Run	0x4	
	Start	0x8	
	Invalid	0xF	

**2.8.1.2 MD-REQ-422240/A-FRCC\_St**

This CAN signal is used to receive FRCC severity value.

Refer to MD-REQ-385133 in First Notification of Loss SPSS for details.

**2.8.1.3 MD-REQ-448140/A-GearLevelPosition\_St**

Message Type: Status

The signal is used to receive gear level position from IDCGearPositionServer.

Name	Literals	Value	Description
GearLevelPosition_St	-	-	The status of gear level position
	Park	0x0	
	Reverse	0x1	
	Neutral	0x2	
	Drive	0x3	
	Sport/Drive Sport	0x4	
	Low	0x5	
	1	0x6	
	2	0x7	
	3	0x8	
	4	0x9	
	5	0xA	
	6	0xB	
	undefined	0xC	
	undefined	0xD	
	unknown position	0xE	
	fault	0xF	

**2.8.1.4 MD-REQ-408179/A-StartRecording**

This API is used to send recording request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.



Refer to MD-REQ-406933 in Video Recording and Playback SPSS for details.

#### **2.8.1.5 MD-REQ-408180/A-PublishRecordingStatus**

This API is used to receive recording status from IDCVideoRecordingClient.

Refer to MD-REQ-411558 in Video Recording and Playback SPSS for details.

#### **2.8.1.6 MD-REQ-408182/A-StopRecording**

This API is used to send stop recording request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-411285 in Video Recording and Playback SPSS for details.

#### **2.8.1.7 MD-REQ-408183/A-ListRecordingSessions**

This API is used to send list recording sessions request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-453178 in Video Recording and Playback SPSS for details.

#### **2.8.1.8 MD-REQ-422233/A-StartPlayback**

This API is used to send playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-410487 in Video Recording and Playback SPSS for details.

#### **2.8.1.9 MD-REQ-422234/A-PausePlayback**

This API is used to send pause playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-413548 in Video Recording and Playback SPSS for details.

#### **2.8.1.10 MD-REQ-422235/A-ResumePlayback**

This API is used to send resume playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-453078 in Video Recording and Playback SPSS for details.

#### **2.8.1.11 MD-REQ-422236/A-StopPlayback**

This API is used to send stop playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-413549 in Video Recording and Playback SPSS for details.

#### **2.8.1.12 MD-REQ-422237/A-DeleteRecording**

This API is used to send delete recording request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.





Refer to MD-REQ-410491 in Video Recording and Playback SPSS for details.

#### **2.8.1.13 MD-REQ-422238/A-ListStorageDeviceInfo**

This API is used to send storage device info request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-410619 in Video Recording and Playback SPSS for details.

#### **2.8.1.14 MD-REQ-422239/A-ProtectRecording**

This API is used to send protect recording request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-410717 in Video Recording and Playback SPSS for details.

#### **2.8.1.15 MD-REQ-448098/A-FormatStorageDevice**

This API is used to send format USB request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-438986 in Video Recording and Playback SPSS for details.

#### **2.8.1.16 MD-REQ-448117/A-ListRecordingSegments**

This API is used to send list recording segments request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-447578 in Video Recording and Playback SPSS for details.

#### **2.8.1.17 MD-REQ-448139/A-DeleteUnprotectedRecording**

This API is used to send delete unprotected recordings request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-447577 in Video Recording and Playback SPSS for details.

#### **2.8.1.18 MD-REQ-448157/A-ManagePlayback**

This API is used to send manage playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-410618 in Video Recording and Playback SPSS for details.

### **2.8.2 IDCAM-IIR-REQ-408181/A-IDCServer \_Tx**

#### **2.8.2.1 MD-REQ-408179/A-StartRecording**

This API is used to send recording request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-406933 in Video Recording and Playback SPSS for details.

**2.8.2.2 MD-REQ-408182/A-StopRecording**

This API is used to send stop recording request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-411285 in Video Recording and Playback SPSS for details.

**2.8.2.3 MD-REQ-408183/A-ListRecordingSessions**

This API is used to send list recording sessions request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-453178 in Video Recording and Playback SPSS for details.

**2.8.2.4 MD-REQ-422233/A-StartPlayback**

This API is used to send playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-410487 in Video Recording and Playback SPSS for details.

**2.8.2.5 MD-REQ-422234/A-PausePlayback**

This API is used to send pause playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-413548 in Video Recording and Playback SPSS for details.

**2.8.2.6 MD-REQ-422235/A-ResumePlayback**

This API is used to send resume playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-453078 in Video Recording and Playback SPSS for details.

**2.8.2.7 MD-REQ-422236/A-StopPlayback**

This API is used to send stop playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-413549 in Video Recording and Playback SPSS for details.

**2.8.2.8 MD-REQ-422237/A-DeleteRecording**

This API is used to send delete recording request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-410491 in Video Recording and Playback SPSS for details.

**2.8.2.9 MD-REQ-422238/A-ListStorageDeviceInfo**

This API is used to send storage device info request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-410619 in Video Recording and Playback SPSS for details.

**2.8.2.10 MD-REQ-422239/A-ProtectRecording**

This API is used to send protect recording request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-410717 in Video Recording and Playback SPSS for details.

**2.8.2.11 MD-REQ-448098/A-FormatStorageDevice**

This API is used to send format USB request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-438986 in Video Recording and Playback SPSS for details.

**2.8.2.12 MD-REQ-448117/A-ListRecordingSegments**

This API is used to send list recording segments request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-447578 in Video Recording and Playback SPSS for details.

**2.8.2.13 MD-REQ-448139/A-DeleteUnprotectedRecording**

This API is used to send delete unprotected recordings request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-447577 in Video Recording and Playback SPSS for details.

**2.8.2.14 MD-REQ-448157/A-ManagePlayback**

This API is used to send manage playback request to IDCVideoRecordingClient. The IDCVideoRecordingClient also uses this API for its response.

Refer to MD-REQ-410618 in Video Recording and Playback SPSS for details.



### 3 General Requirements

#### 3.1 IDCAM-REQ-456058/A-Power Moding

The IDC feature shall only be capable of recording when Ignition\_St = "Run" or "Start".

#### 3.2 IDCAM-REQ-456059/A-Preconditions of Recording

The IDC feature shall only start recording when the feature is enabled during Ignition\_St = "Run" or "Start" and memory device is available.

#### 3.3 IDCAM-REQ-456067/A-Camera View Name

IDCServer shall set CameraViewName as AR\_RGB\_CAMERA view for the augmented reality forward facing view in StartRecording request.

#### 3.4 IDCAM-REQ-456079/A-Select Storage Device

IDCInterfaceClient shall provide a menu lists all of the storage devices detected for user to select when there's more than one storage device detected in the following scenarios:

- User selects to format USB in Settings
- User selects to delete all unlocked videos in Settings
- IDCInterfaceClient displays a pop-up asking the user to format USB when user selects the Dash Cam feature from the menu

#### 3.5 IDCAM-REQ-456080/A-Store Settings

IDCServer shall be capable of storing IDC settings.

#### 3.6 IDCAM-REQ-456084/A-Protect/Delete IDC Recorded Files Only

The IDC feature shall only be capable of protecting and deleting videos that were recorded by IDC.



## 4 Functional Definition

### 4.1 IDCAM-FUN-REQ-408184/A-Display IDC Landing Page

#### 4.1.1 Requirements

##### 4.1.1.1 IDCAM-REQ-456082/A-Display the List of Recording Sessions

IDCServer shall send ListRecordingSessions Request to IDCVideoRecordingClient and set values in the request as below when user selects IDC menu from the home screen:

FeatureName = Dashcam;

StorageDevice\_ID = StorageDevice\_ID.

IDCInterfaceClient shall display the list of recording sessions upon receiving the response from IDCVideoRecordingClient via ListRecordingSessions\_Rsp.

IDCInterfaceClient shall display a text indicating the list is not available upon receiving ListRecordingSessions\_Rsp RequestStatus = "Fail" from IDCVideoRecordingClient.

##### 4.1.1.2 IDCAM-REQ-456083/A-Display the List of Recording Segments

IDCServer shall send ListRecordingSegments Request to IDCVideoRecordingClient and set values in the request as below when user selects a recording session:

Session\_id = recording\_session\_id received via ListRecordingSessions\_Rsp.

IDCInterfaceClient shall display the list of recording segments upon receiving the response from IDCVideoRecordingClient via ListRecordingSegments\_Rsp.

IDCInterfaceClient shall display a text indicating the list is not available upon receiving ListRecordingSegments\_Rsp RequestStatus = "Fail" from IDCVideoRecordingClient.

##### 4.1.1.3 IDCAM-REQ-456085/A-Grant Recording Permission

IDCInterfaceClient shall display a popup asking for permission of recording if the permission is not granted yet when the user opens the IDC menu.

If user clicks on "Enable" button, IDCServer shall send StartRecording\_Rq to IDCVideoRecordingClient. IDCInterfaceClient shall display IDC landing page with feature turned ON in "Settings" upon receiving StartRecording\_Rsp RequestStatus = "Success" from IDCVideoRecordingClient; IDCInterfaceClient shall display USB full error message upon receiving StartRecording\_Rsp RequestStatus = "Fail" and ErrorDetail = "0x5" or "0x8"; IDCInterfaceClient shall display camera error message upon receiving StartRecording\_Rsp RequestStatus = "Fail" and ErrorDetail = "0xB" or "0xC"; IDCInterfaceClient shall display general error message upon receiving RequestStatus = "Fail" and ErrorDetail = other values.

If user clicks on "Disable" button, IDCInterfaceClient shall display IDC landing page with no video files displayed.

##### 4.1.1.4 IDCAM-REQ-456086/A-USB Detection

IDCInterfaceClient shall display a popup requesting the user to insert USB if USB is not detected when the user opens the IDC menu. The popup shall disappear when USB is detected.

If user clicks on "Cancel" button, IDCInterfaceClient shall display IDC landing page with no video files displayed.

##### 4.1.1.5 IDCAM-REQ-460397/A-Send StartRecording Request

IDCServer shall send StartRecording request to IDCVideoRecordingClient in below scenarios:



- IDC enabled, USB available and Ignition\_St changes from “Off” to “Run” or “Start”
- IDC changes from disabled to enabled, USB available and Ignition\_St = “Run” or “Start”
- IDC enabled, USB unavailable but changes to available and Ignition\_St = “Run” or “Start”
- IDC enabled, USB available, Ignition\_St = “Run” or “Start” and USB format just completed

#### 4.1.2 Use Cases

##### 4.1.2.1 IDCAM-UC-REQ-447657/A-Display IDC Landing Page

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is on Dash cam is enabled USB is inserted and formatted Vehicle is in park mode (GearLevelPosition_St = “Park”)
<b>Scenario Description</b>	User selects the Dash Camera icon from the menu. IDCServer sends ListRecordingSessions_Rq to IDCVideoRecordingClient. IDCServer receives ListRecordingSessions_Rsp. If ListRecordingSessions_Rsp RequestStatus = “Success”, IDCInterfaceClient displays the IDC landing page (buttons including “Recording status”, “Settings”, “Info books” and a list of recording sessions along with “Lock/Unlock” and “Delete” options). If ListRecordingSessions_Rsp RequestStatus = “Fail”, IDCInterfaceClient displays an error message indicating the list cannot be displayed.
<b>Post-conditions</b>	IDC landing page shows up.
<b>List of Exception Use Cases</b>	E1: The permission for Dash Cam to record is not granted yet and a pop-up dialog box will show up asking for permission. User clicks on “Enable” button and IDCServer sends StartRecording_Rq to IDCVideoRecordingClient; IDCServer receives response via StartRecording_Rsp; if StartRecording_Rsp RequestStatus = “Success”, IDCInterfaceClient displays IDC landing page with Dash cam turned ON; if StartRecording_Rsp RequestStatus = “Fail” and ErrorDetail = “0x5” or “0x8”, IDCInterfaceClient displays USB full error message; if StartRecording_Rsp RequestStatus = “Fail” and ErrorDetail = “0xB” or “0xC”, IDCInterfaceClient displays camera error message; otherwise IDCInterfaceClient displays general error message. User clicks on “Disable” button and the landing page shows up with no video files displayed. E2: USB is not inserted and a pop-up dialog box will show up requesting the user to insert USB. User inserts USB and IDCServer sends StartRecording_Rq to IDCVideoRecordingClient; IDCServer receives response via StartRecording_Rsp; if StartRecording_Rsp RequestStatus = “Success”, IDCInterfaceClient displays IDC landing page. User clicks on “Cancel” button and the landing page shows up with no video files displayed. E3: USB is not formatted and a pop-up dialog box will show up asking if the user would like to format it (If there’s more than one storage devices detected, a menu will be displayed for the user to select a storage device to format). User clicks on “Yes” button and IDCInterfaceClient displays in-progress icon; IDCServer sends FormatStorageDevice_Rq to IDCVideoRecordingClient and receives response via FormatStorageDevice_Rsp; if FormatStorageDevice_Rsp RequestStatus = “Success”, IDCInterfaceClient notifies the user and displays the landing page; if FormatStorageDevice_Rsp RequestStatus = “Fail”, IDCInterfaceClient notifies the user. User clicks on “No” button and the landing page shows up with no video files displayed. E4: If the transmission status changes from Park, then IDC landing page will be exited.
<b>Interfaces</b>	HMI, Ethernet



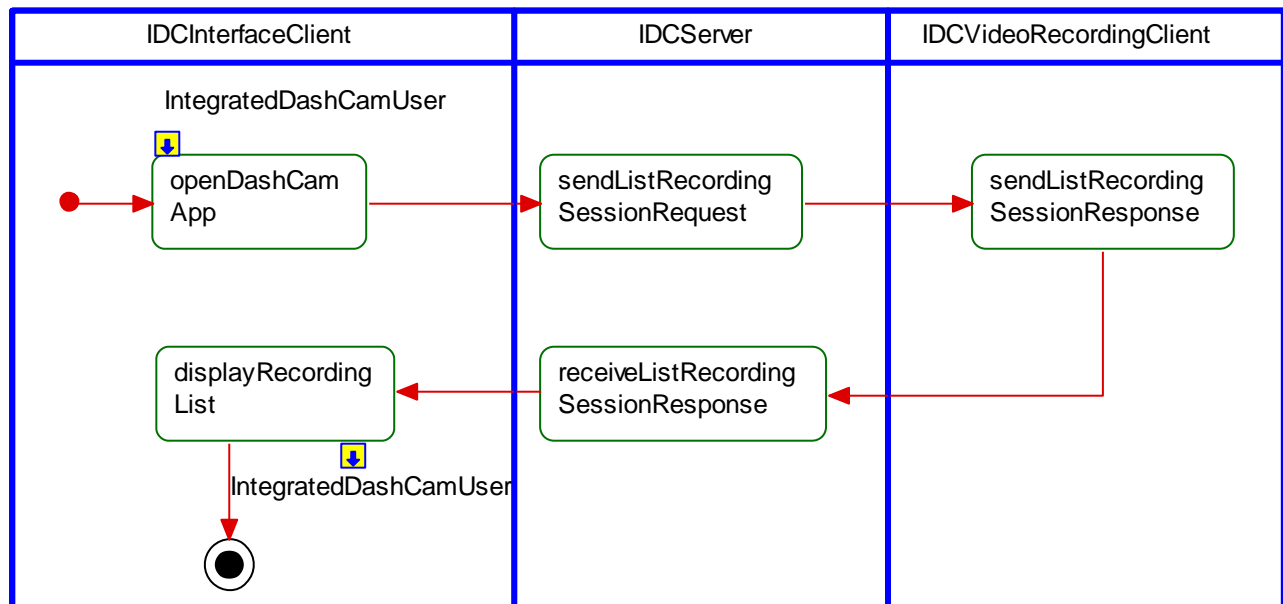
#### 4.1.2.2 IDCAM-UC-REQ-448097/A-Display Recording Segments

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is on Vehicle is in park mode (GearLevelPosition_St = "Park") IDC landing page shows up with a list of recording sessions.
<b>Scenario Description</b>	User selects one of the recording sessions. IDCServer sends ListRecordingSegments_Rq to IDCVideoRecordingClient and receives ListRecordingsSegments_Rsp. If ListRecordingsSegments_Rsp RequestStatus = "Success", IDCInterfaceClient displays the list of recording segments under selected recording session.
<b>Post-conditions</b>	User is able to see the list of segments under the selected recording session.
<b>List of Exception Use Cases</b>	If ListRecordingsSegments_Rsp RequestStatus = "Fail", IDCInterfaceClient displays a failure message.
<b>Interfaces</b>	HMI, Ethernet

#### 4.1.3 White Box View

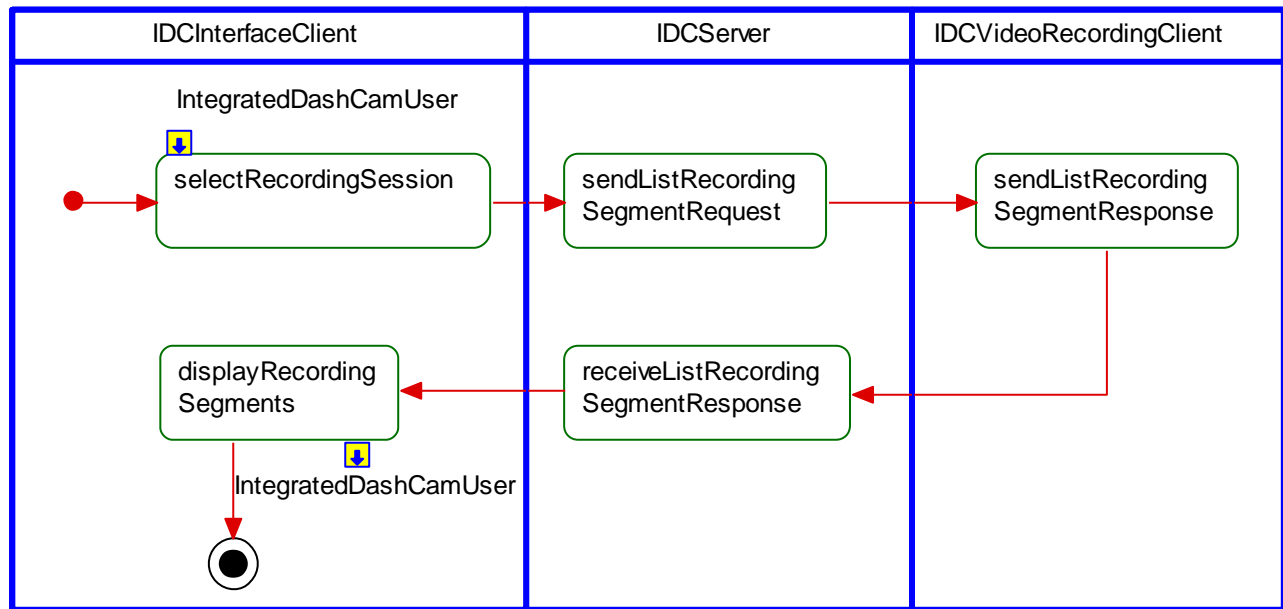
##### 4.1.3.1 Activity Diagrams

##### 4.1.3.1.1 IDCAM-ACT-REQ-408190/A-Display Recording Sessions



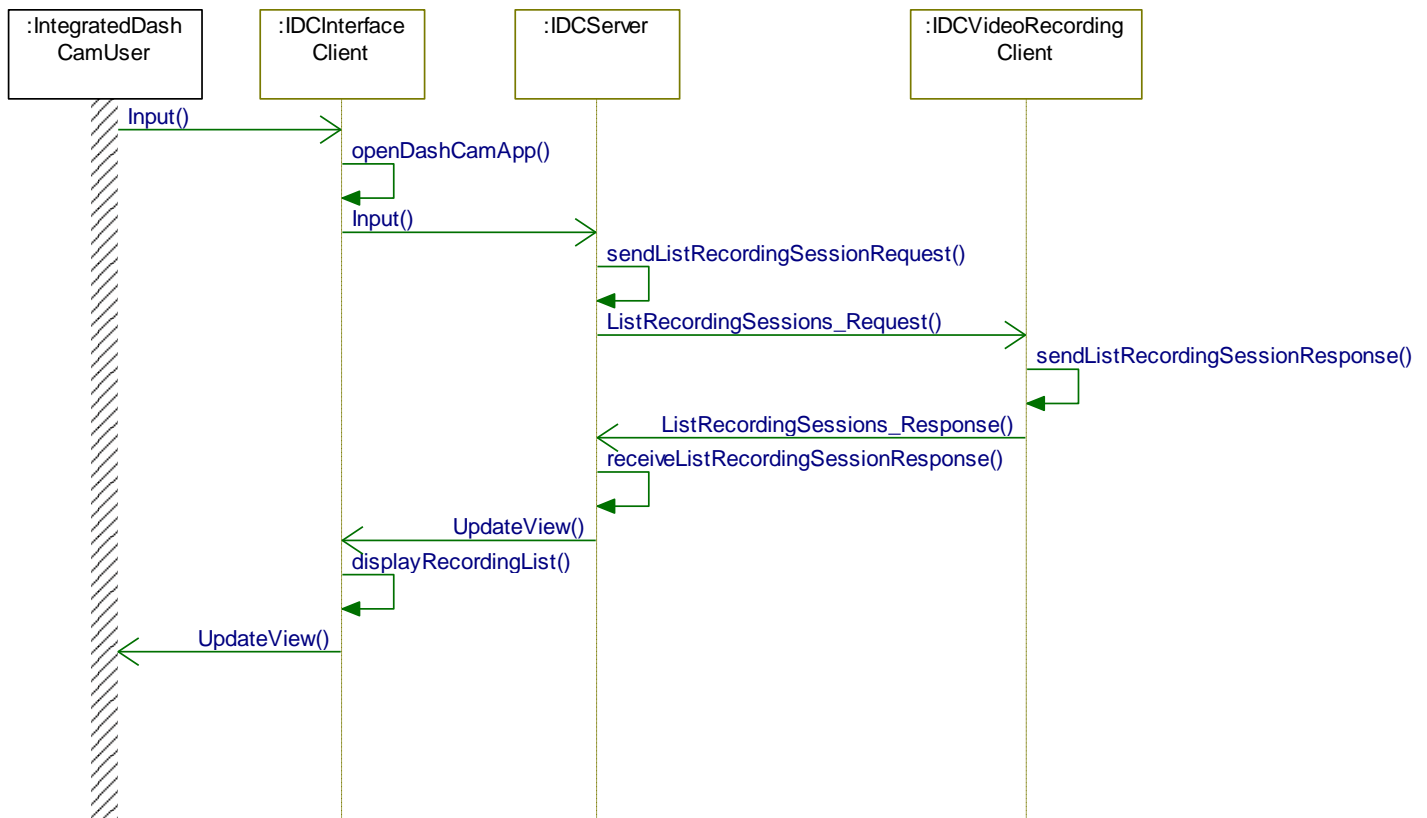


## 4.1.3.1.2 IDCAM-ACT-REQ-460417/A-Display Recording Segments



## 4.1.3.2 Sequence Diagrams

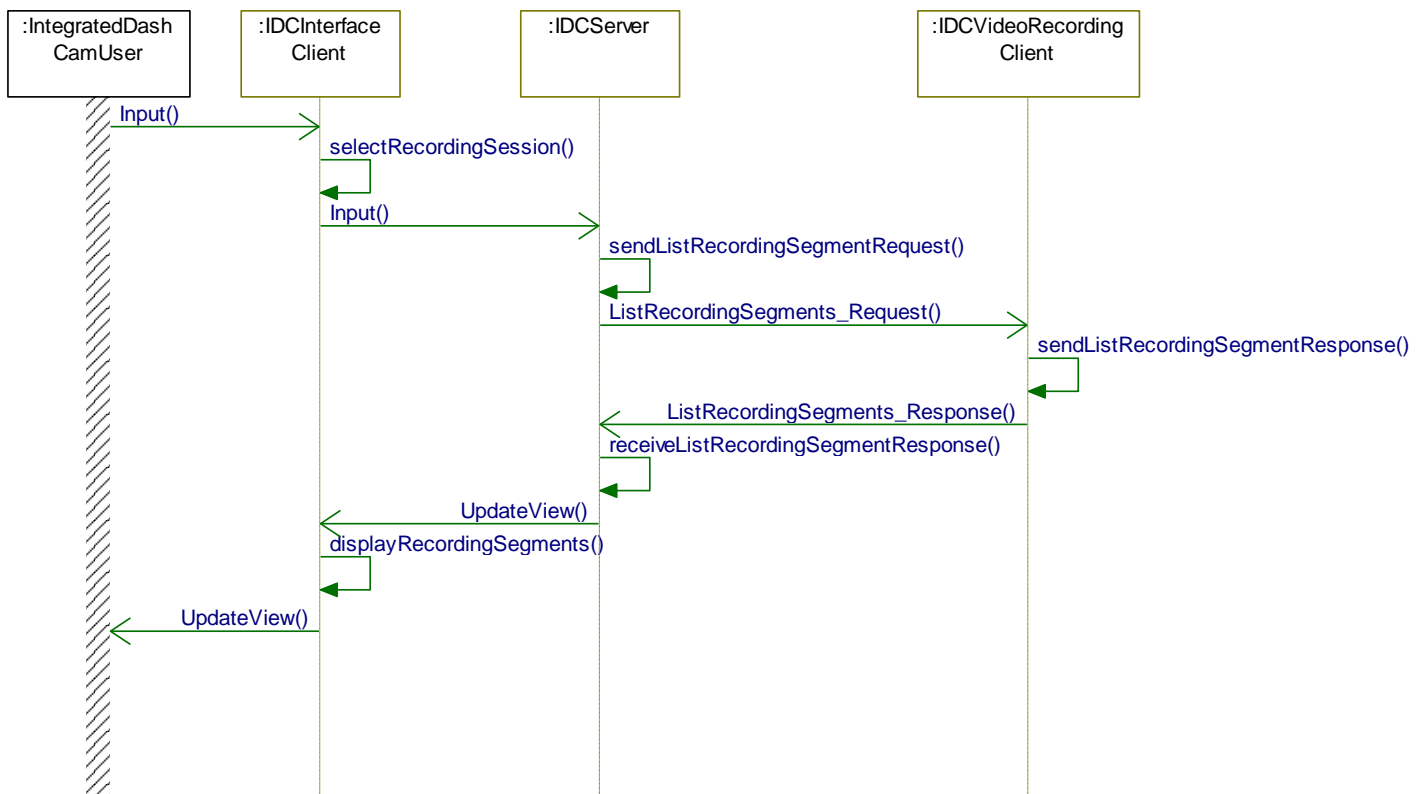
## 4.1.3.2.1 IDCAM-SD-REQ-408191/A-Display Recording Sessions







#### 4.1.3.2.2 IDCAM-SD-REQ-460418/A-Display Recording Segments



## 4.2 IDCAM-FUN-REQ-422222/A-Display Recording Status

### 4.2.1 Requirements

#### 4.2.1.1 IDCAM-REQ-456060/A-Display Recording Status

IDCInterfaceClient shall provide a Recording Status icon to inform the driver of different IDC recording statuses as below when the HMI is in IDC menu based on the recording\_status value received via PublishRecordingStatus API:

When user disables IDC, IDCInterfaceClient shall show the icon as IDC feature OFF;

When user enables IDC and recording\_status != 0x1, IDCInterfaceClient shall show the icon as feature ON but not recording;

When user enables IDC and recording\_status = 0x1, IDCInterfaceClient shall show the icon as feature on with active recording.

### 4.2.2 Use Cases

#### 4.2.2.1 IDCAM-UC-REQ-447658/A-Display Recording Status

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is on User selects the Dash Camera icon from the menu Vehicle is in park mode (GearLevelPosition_St = "Park")
<b>Scenario Description</b>	IDCVideoRecordingClient sends current recording status to IDCServer via PublishRecordingStatus.

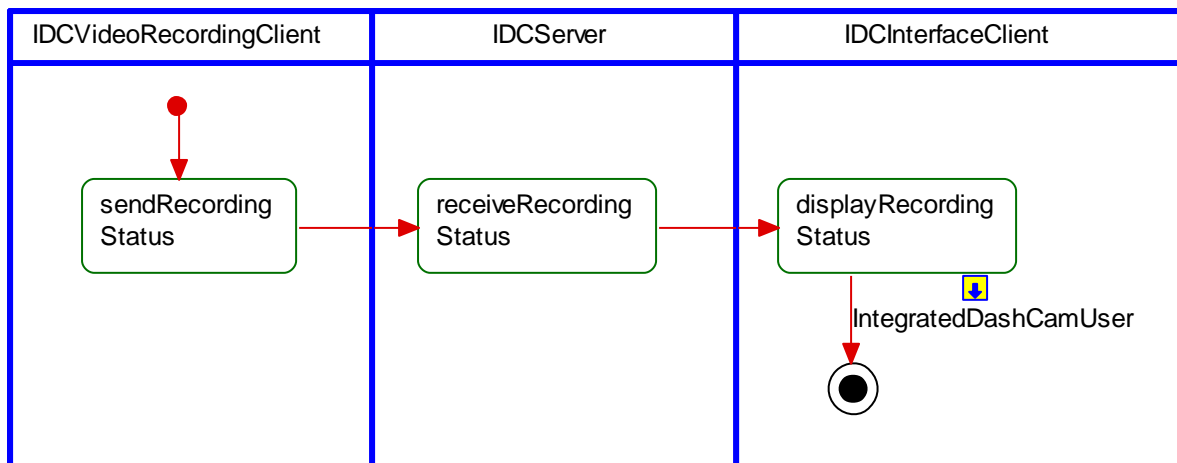


	IDCInterfaceClient displays recording status icon (indicating Dash cam feature OFF, feature ON but not recording and feature on with active recording) inside the IDC menu based on the recording status received.
<b>Post-conditions</b>	User is able to see recording status inside the IDC menu.
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	HMI, Ethernet

## 4.2.3 White Box View

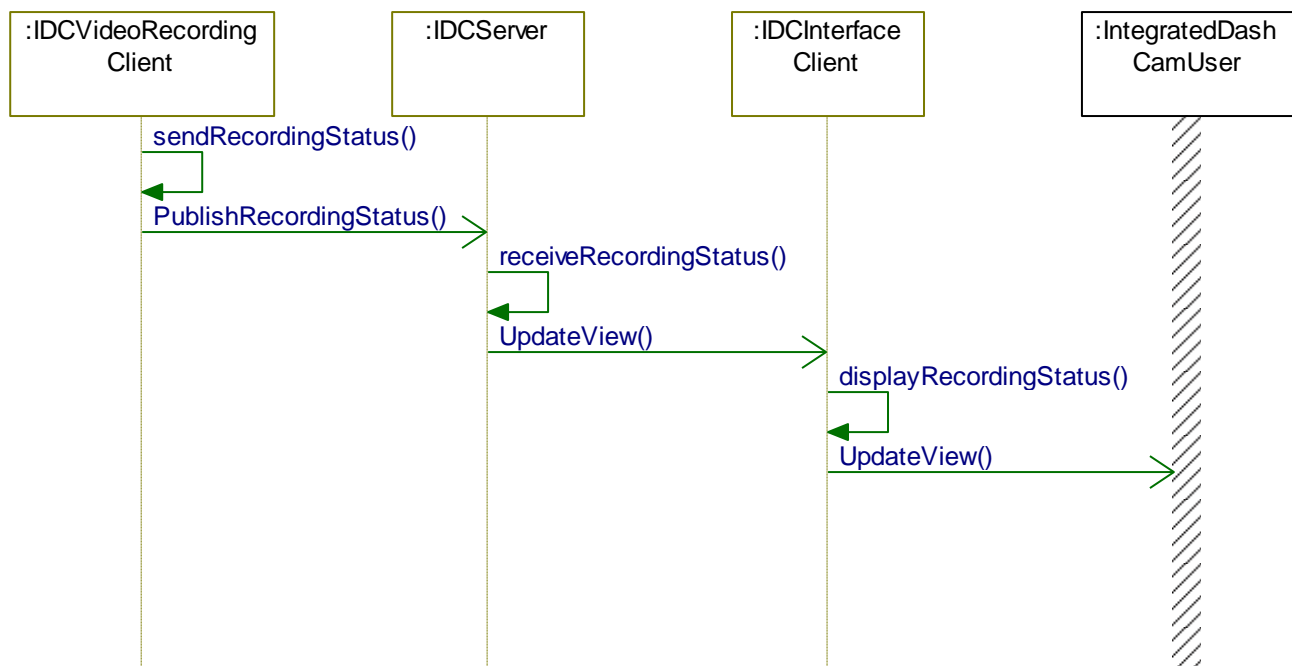
### 4.2.3.1 Activity Diagrams

#### 4.2.3.1.1 IDCAM-ACT-REQ-422223/A-Display Recording Status



### 4.2.3.2 Sequence Diagrams

#### 4.2.3.2.1 IDCAM-SD-REQ-422224/A-Display Recording Status





## 4.3 IDCAM-FUN-REQ-414964/A-IDC Settings

### 4.3.1 Requirements

#### 4.3.1.1 IDCAM-REQ-456057/A-Enable/Disable IDC

IDCInterfaceClient shall provide HMI to the user to enable/disable the feature.  
When user selects to enable/disable the feature, IDCServer shall send StartRecording/StopRecording request to IDCVideoRecordingClient.  
IDCInterfaceClient shall update the button status on the display upon receiving the response.

#### 4.3.1.2 IDCAM-REQ-456061/A-Record Metadata

IDCServer shall request metadata to be recorded alongside the video by setting MetadataToRecord in StartRecording request.  
IDCServer shall always request VIN, Date and Time to be recorded as metadata.  
IDCInterfaceClient shall provide HMI to the user to turn ON/OFF the GPS Logging, Vehicle Speed and Pedal Position so that the data will be recorded or not recorded.

#### 4.3.1.3 IDCAM-REQ-456062/A-Encrypt Metadata

IDCServer shall always request metadata to be encrypted regardless of the status of the optional metadata settings by setting EncryptMetadata Boolean = "0x1" in StartRecording request.

#### 4.3.1.4 IDCAM-REQ-456064/A-Set Recording Mode

IDCServer shall request the recording mode to be Continuous by setting RecordingMode value = "0x0" in StartRecording request.

#### 4.3.1.5 IDCAM-REQ-456065/A-Set Segment Duration

IDCInterfaceClient shall provide HMI to the user to set segment duration as 2/5/10 Min.  
IDCServer shall set SegmentDuration as 120/300/600 secs in StartRecording request based on user selection.

#### 4.3.1.6 IDCAM-REQ-456066/A-Setting Change when Recording is Active

If recording is already active and a setting change (Loop Recording, Data Collection Settings, etc.) occurs, IDCServer shall send StopRecording request to IDCVideoRecordingClient to end the current recording and send StartRecording request to IDCVideoRecordingClient to start a new recording with the new settings.

#### 4.3.1.7 IDCAM-REQ-456087/A-Display Memory Status

IDCServer shall send ListStorageDeviceInfo Request to IDCVideoRecordingClient and set values in the request as below when user selects "Settings" or open the "USB Storage" tab:

StorageDevice\_ID = StorageDevice\_ID;

FeatureName = Dashcam.

IDCInterfaceClient shall display the memory status of the USB upon receiving the response from IDCVideoRecordingClient via ListStorageDeviceInfo\_Rsp.



IDCInterfaceClient shall display a text indicating the info is not available upon receiving ListStorageDeviceInfo\_Rsp RequestStatus = "Fail" from IDCVideoRecordingClient.

#### 4.3.1.8 IDCAM-REQ-456088/A-Format USB

IDCServer shall send FormatStorageDevice Request to IDCVideoRecordingClient and set values in the request as below when user selects to format USB on the IDCInterfaceClient:

StorageDevice\_ID = StorageDevice\_ID received via StartRecording\_Rsp (only one USB detected) or based on user selection (more than one USB detected);

FeatureName = Dashcam.

IDCInterfaceClient shall notify the user of the result upon receiving FormatStorageDevice\_Rsp from IDCVideoRecordingClient.

#### 4.3.1.9 IDCAM-REQ-456089/A-Delete All Unlocked Videos

IDCServer shall send DeleteUnprotectedRecording Request to IDCVideoRecordingClient and set values in the request as below when user selects to delete all unlocked videos on the IDCInterfaceClient:

FeatureName = Dashcam;

StorageDevice\_ID = StorageDevice\_ID received via StartRecording\_Rsp (only one USB detected) or based on user selection (more than one USB detected);

Delete to percent = 0.

IDCInterfaceClient shall notify the user upon receiving DeleteUnprotectedRecording\_Rsp RequestStatus = "Fail" from IDCVideoRecordingClient.

#### 4.3.1.10 IDCAM-REQ-456090/A-Limit USB Storage

IDCInterfaceClient shall allow the user to set the percentage of the total storage that IDC feature should be limited to under "Settings". The IDCServer shall set storage\_limit\_percent based on the user selection via StartRecording request.

#### 4.3.1.11 IDCAM-REQ-456091/A-Other Settings for StartRecording Request

IDCServer shall set the following values when sending out the StartRecording request to IDCVideoRecordingClient:

FeatureName = Dashcam;

DeviceSelectionStrategy = INCLUDE\_ANY (0x2);

OutOfSpaceStrategy = Delete oldest from any session (0x2);

Framerate = FPS\_30 (0x0);

Resolution = RES\_1920\_BY\_1080 (0x3);

Bitrate = KBPS\_5000;

Encrypt Video = No (0x0).

#### 4.3.1.12 IDCAM-REQ-456092/A-Settings for StopRecording Request

IDCServer shall set the following values when sending out the StopRecording request to IDCVideoRecordingClient:

FeatureName = Dashcam;

RecordingID = the RecordingID received via StartRecording\_Rsp.

### 4.3.2 Use Cases

#### 4.3.2.1 IDCAM-UC-REQ-447659/A-Enable/Disable IDC



<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is on Vehicle is in park mode (GearLevelPosition_St = "Park") USB is inserted IDC landing page shows up and user clicks on "Settings" button.
<b>Scenario Description</b>	User enables/disables IDC recording by turning ON/OFF the button. IDCServer sends StartRecording_Rq / StopRecording_Rq to IDCVideoRecordingClient based on the user selection. IDCServer receives the response via StartRecording_Rsp or StopRecording_Rsp and IDCInterfaceClient updates the button status accordingly if successful.
<b>Post-conditions</b>	IDC recording is enabled/disabled.
<b>List of Exception Use Cases</b>	StartRecording_Rsp RequestStatus = "Fail". If ErrorDetail = "0x5" or "0x8", IDCInterfaceClient displays USB full error message; if ErrorDetail = "0xB" or "0xC", IDCInterfaceClient displays camera error message; otherwise IDCInterfaceClient displays general error message.
<b>Interfaces</b>	HMI, Ethernet

#### 4.3.2.2 IDCAM-UC-REQ-447660/A-Display USB Storage

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Vehicle is in park mode (GearLevelPosition_St = "Park") IDC landing page shows up and user clicks on "Settings" button. USB is inserted
<b>Scenario Description</b>	IDCServer sends ListStorageDeviceInfo_Rq to IDCVideoRecordingClient. IDCServer receives ListStorageDeviceInfo_Rsp and IDCInterfaceClient displays the storage info including Dash Cam unprotected data, Dash Cam protected data, other, free space, total space, etc..
<b>Post-conditions</b>	User can see the current memory statistics on IDCInterfaceClient.
<b>List of Exception Use Cases</b>	E1: If ListStorageDeviceInfo_Rsp RequestStatus = "Fail", IDCInterfaceClient displays a text indicating the info is not available. E2: User can also see the current memory statistics under "USB Storage" tab. E3: USB is not inserted; no memory status is displayed and the "USB Storage" button is inactive.
<b>Interfaces</b>	HMI, Ethernet

#### 4.3.2.3 IDCAM-UC-REQ-447661/A-Limit Storage

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Vehicle is in park mode (GearLevelPosition_St = "Park") IDC landing page shows up and user clicks on "Settings" button. USB is inserted. User selects "USB storage" option.
<b>Scenario Description</b>	User sets "Limit storage" and limits the storage for IDC recording only. User selects to leave the current page and IDCServer sends StopRecording_Rq to IDCVideoRecordingClient to end the current recording and sends StartRecording_Rq to IDCVideoRecordingClient to start a new recording with the new Limit Storage setting.
<b>Post-conditions</b>	Certain amount of the storage is limited for IDC recording.
<b>List of Exception Use Cases</b>	USB is not inserted; "USB Storage" button is inactive and no action can be taken.
<b>Interfaces</b>	Ethernet

**4.3.2.4 IDCAM-UC-REQ-447662/A-Format USB**

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Vehicle is in park mode (GearLevelPosition_St = "Park") IDC landing page shows up and user clicks on "Settings" button. USB is inserted. User selects "USB storage" option.
<b>Scenario Description</b>	User taps on "Format USB" button and IDCInterfaceClient displays a warning box for user's confirmation (If there's more than one storage devices detected, a menu will be displayed for the user to select a storage device to format). User clicks on "Yes" button and IDCInterfaceClient displays in-progress icon. IDCServer sends FormatStorageDevice_Rq to IDCVideoRecordingClient and receives response via FormatStorageDevice_Rsp. If FormatStorageDevice_Rsp RequestStatus = "Success", IDCInterfaceClient notifies the user.
<b>Post-conditions</b>	USB is formatted.
<b>List of Exception Use Cases</b>	E1: USB is not inserted; "USB Storage" button is inactive and no action can be taken. E2: User clicks on "No" when the warning box shows up and no action is taken. E3: FormatStorageDevice_Rsp RequestStatus = "Fail", IDCInterfaceClient notifies the user.
<b>Interfaces</b>	Ethernet

**4.3.2.5 IDCAM-UC-REQ-447663/A-Delete All Unlocked Videos**

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Vehicle is in park mode (GearLevelPosition_St = "Park") IDC landing page shows up and user clicks on "Settings" button. USB is inserted. User selects "USB storage" option.
<b>Scenario Description</b>	User taps on "Delete all unlocked videos". IDCInterfaceClient displays a dialog box asking for the confirmation of the deletion (If there's more than one storage devices detected, a menu will be displayed for the user to select a storage device to delete). User selects "Yes" and IDCInterfaceClient displays in-progress bar. IDCServer sends DeleteUnprotectedRecording_Rq to IDCVideoRecordingClient and receives response via DeleteUnprotectedRecording_Rsp. If DeleteUnprotectedRecording_Rsp RequestStatus = "Success", the popup disappears.
<b>Post-conditions</b>	Unlocked videos are deleted.
<b>List of Exception Use Cases</b>	E1: User selects "No" when the dialog box shows up. Pop-up closes and no action is taken. E2: DeleteUnprotectedRecording_Rsp RequestStatus = "Fail", IDCInterfaceClient displays a text indicating the videos cannot be deleted.
<b>Interfaces</b>	HMI, Ethernet

**4.3.2.6 IDCAM-UC-REQ-447664/A-Set Segment Duration**

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Vehicle is in park mode (GearLevelPosition_St = "Park") IDC landing page shows up and user clicks on "Settings" button.



<b>Scenario Description</b>	User sets Segment Duration to be “2min”, “5min”, or “10min”.
<b>Post-conditions</b>	Segment Duration is successfully set.
<b>List of Exception Use Cases</b>	If recording is already active and a setting change occurs, IDCServer will send StopRecording_Rq to IDCVideoRecordingClient to end the current recording and send StartRecording_Rq to IDCVideoRecordingClient to start a new recording with the new settings.
<b>Interfaces</b>	HMI, Ethernet

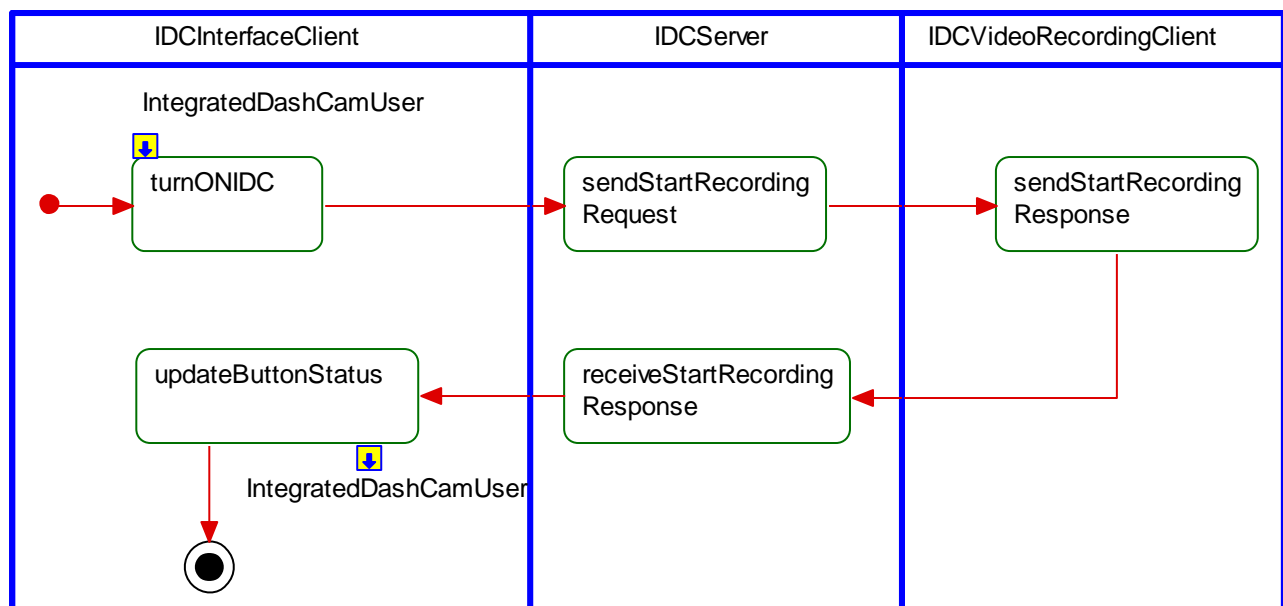
#### 4.3.2.7 IDCAM-UC-REQ-447665/A-Data Collection Settings

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Vehicle is in park mode (GearLevelPosition_St = “Park”) IDC landing page shows up and user clicks on “Settings” button. User selects “Data collection” option.
<b>Scenario Description</b>	User is able to turn ON/OFF the GPS Logging, Vehicle Speed and Pedal Position.
<b>Post-conditions</b>	GPS Logging / Vehicle Speed / Pedal Position will (not) be displayed as an overlay on recorded videos if user selects to turn ON/OFF the toggle button.
<b>List of Exception Use Cases</b>	If recording is already active and a setting change occurs, IDCServer will send StopRecording_Rq to IDCVideoRecordingClient to end the current recording and send StartRecording_Rq to IDCVideoRecordingClient to start a new recording with the new settings.
<b>Interfaces</b>	HMI, Ethernet

### 4.3.3 White Box View

#### 4.3.3.1 Activity Diagrams

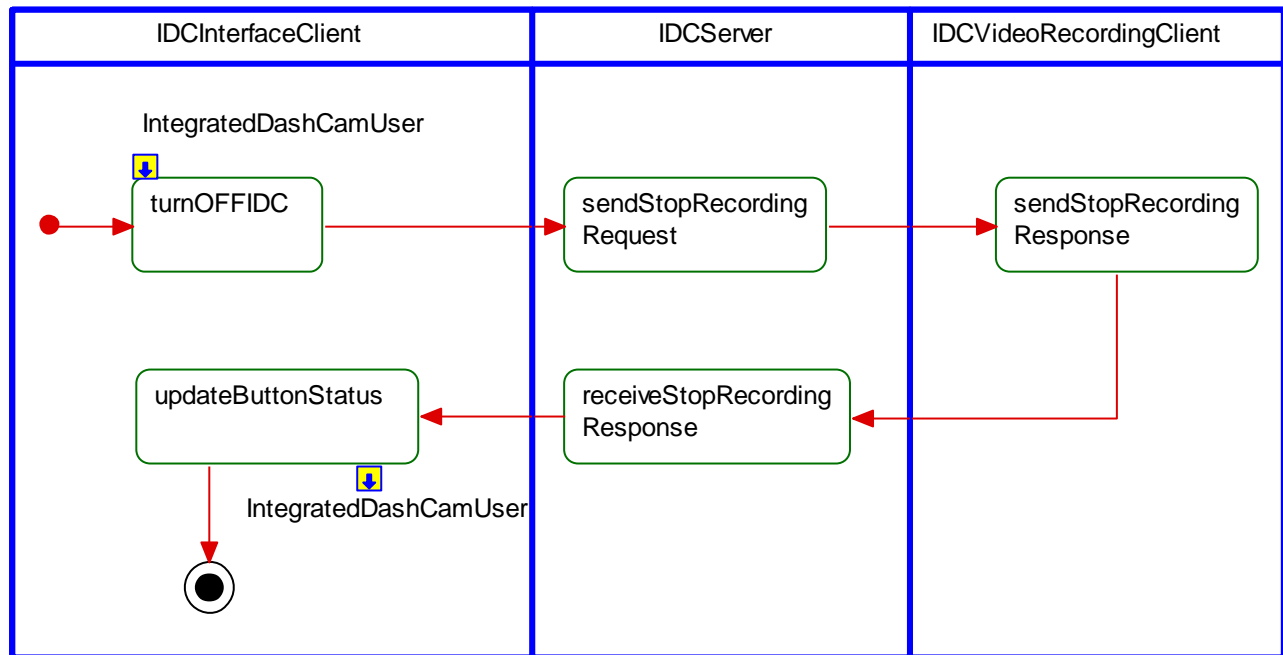
##### 4.3.3.1.1 IDCAM-ACT-REQ-414965/A-Enable IDC



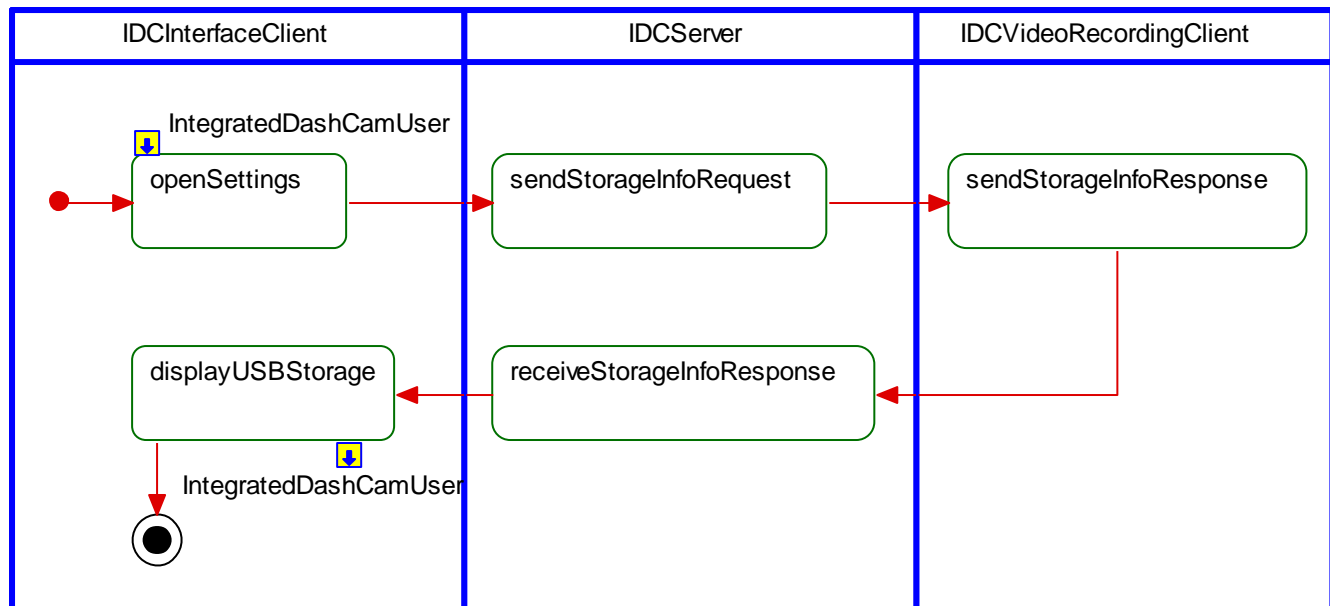




## 4.3.3.1.2 IDCAM-ACT-REQ-460437/A-Disable IDC



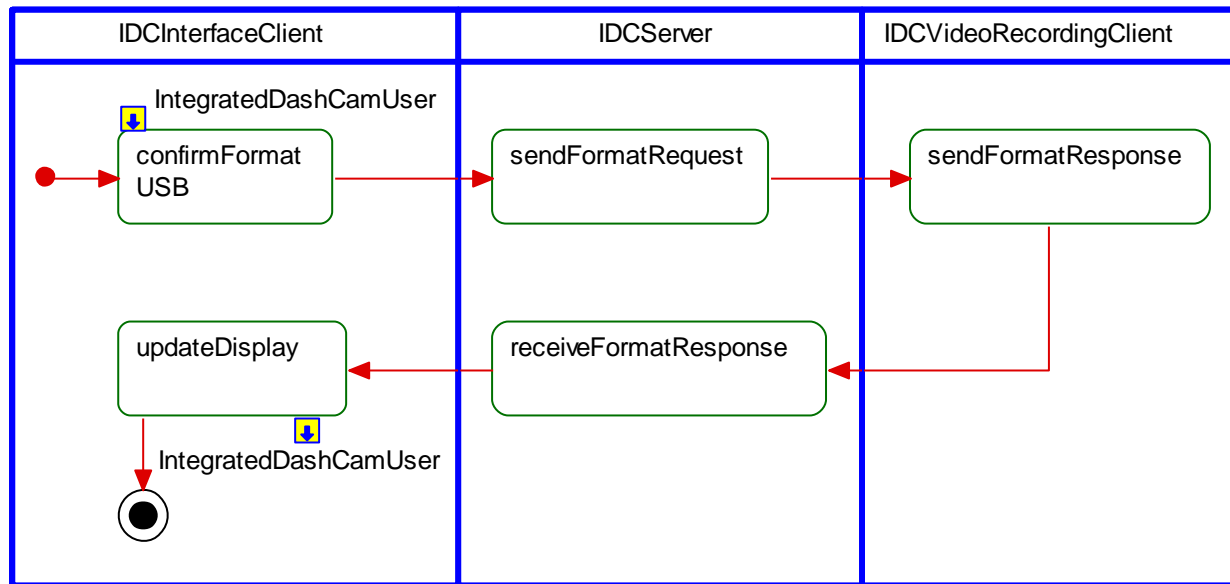
## 4.3.3.1.3 IDCAM-ACT-REQ-460441/A-Display USB Storage



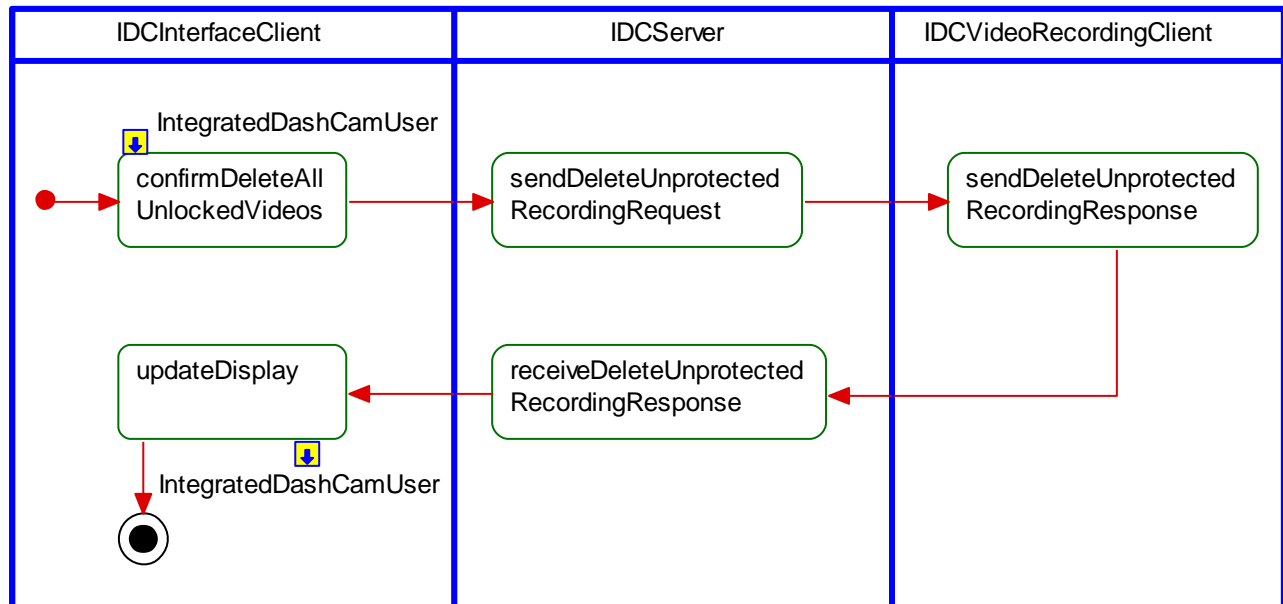




## 4.3.3.1.4 IDCAM-ACT-REQ-460443/A-Format USB



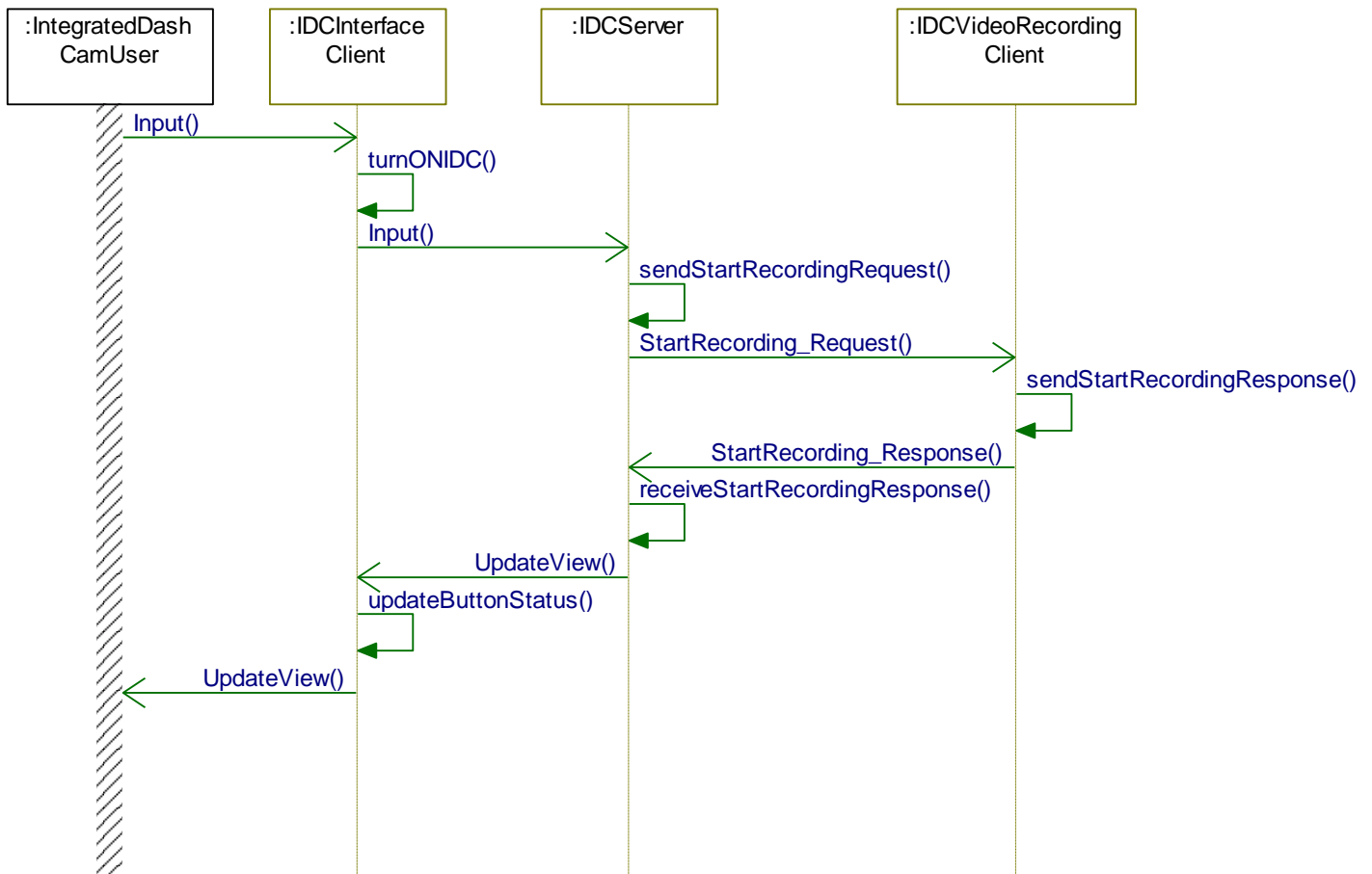
## 4.3.3.1.5 IDCAM-ACT-REQ-460445/A-Delete All Unlocked Videos





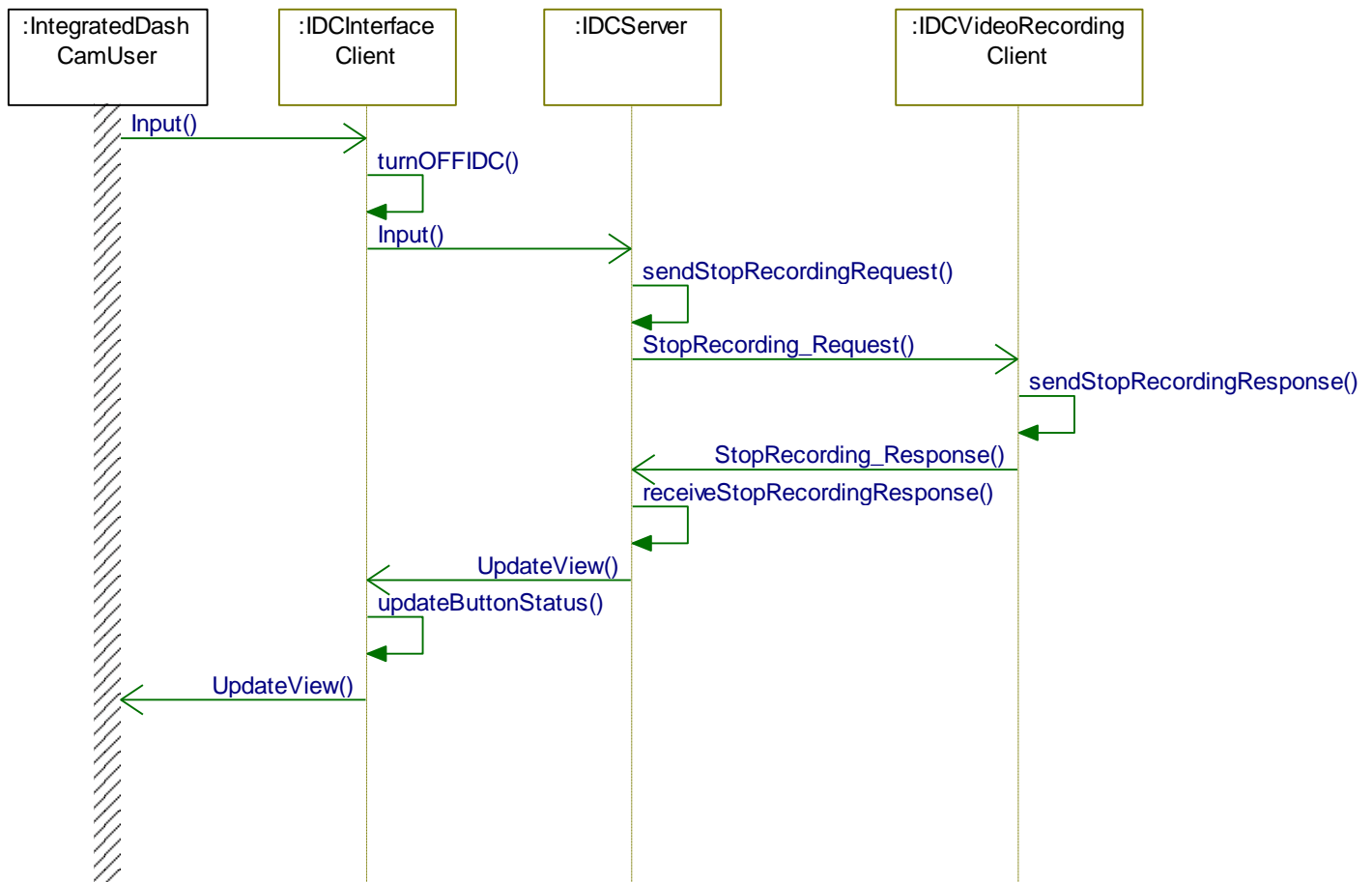
### 4.3.3.2 Sequence Diagrams

#### 4.3.3.2.1 IDCAM-SD-REQ-414966/A-Enable IDC



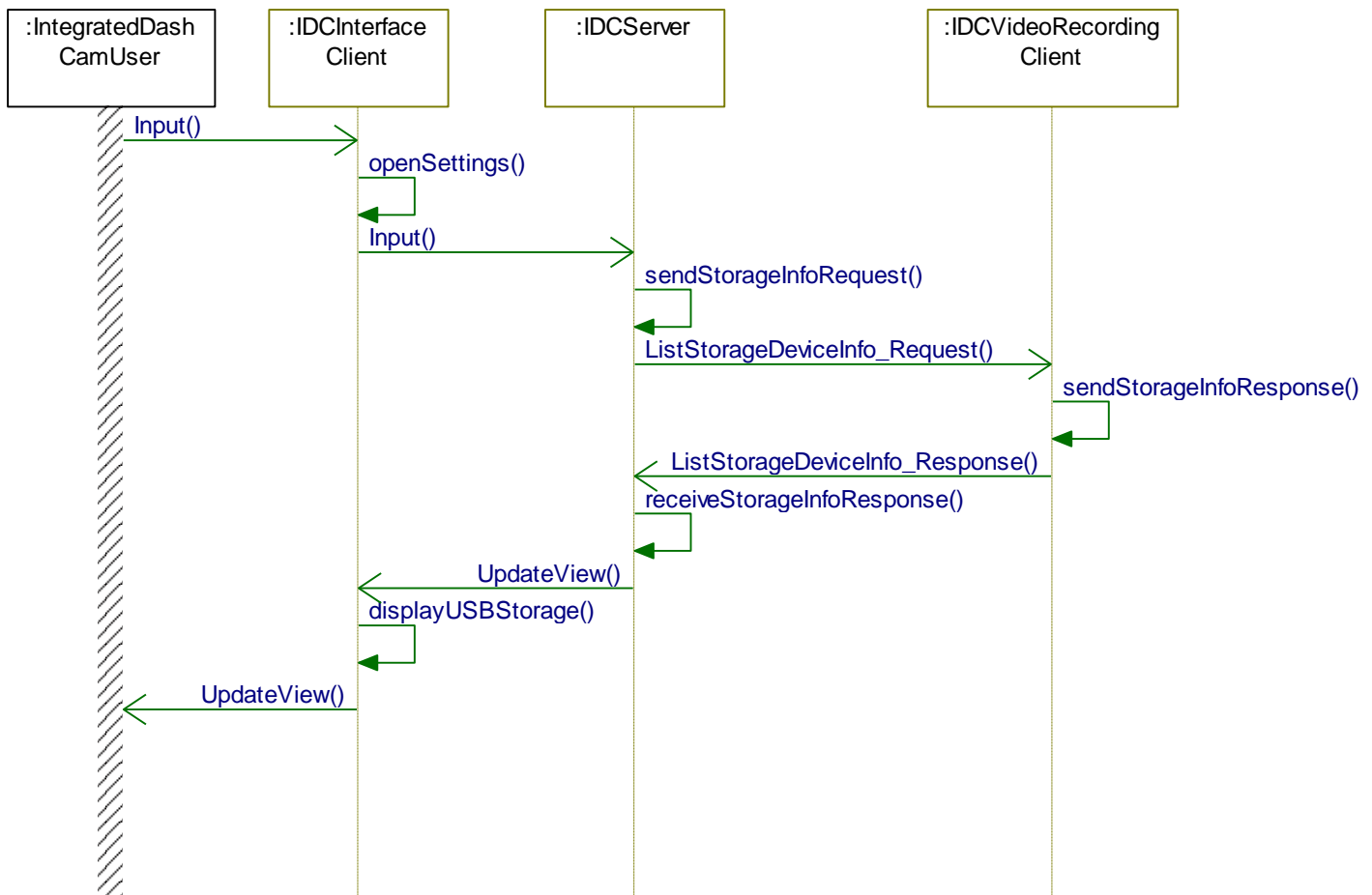


## 4.3.3.2.2 IDCAM-SD-REQ-460438/A-Disable IDC



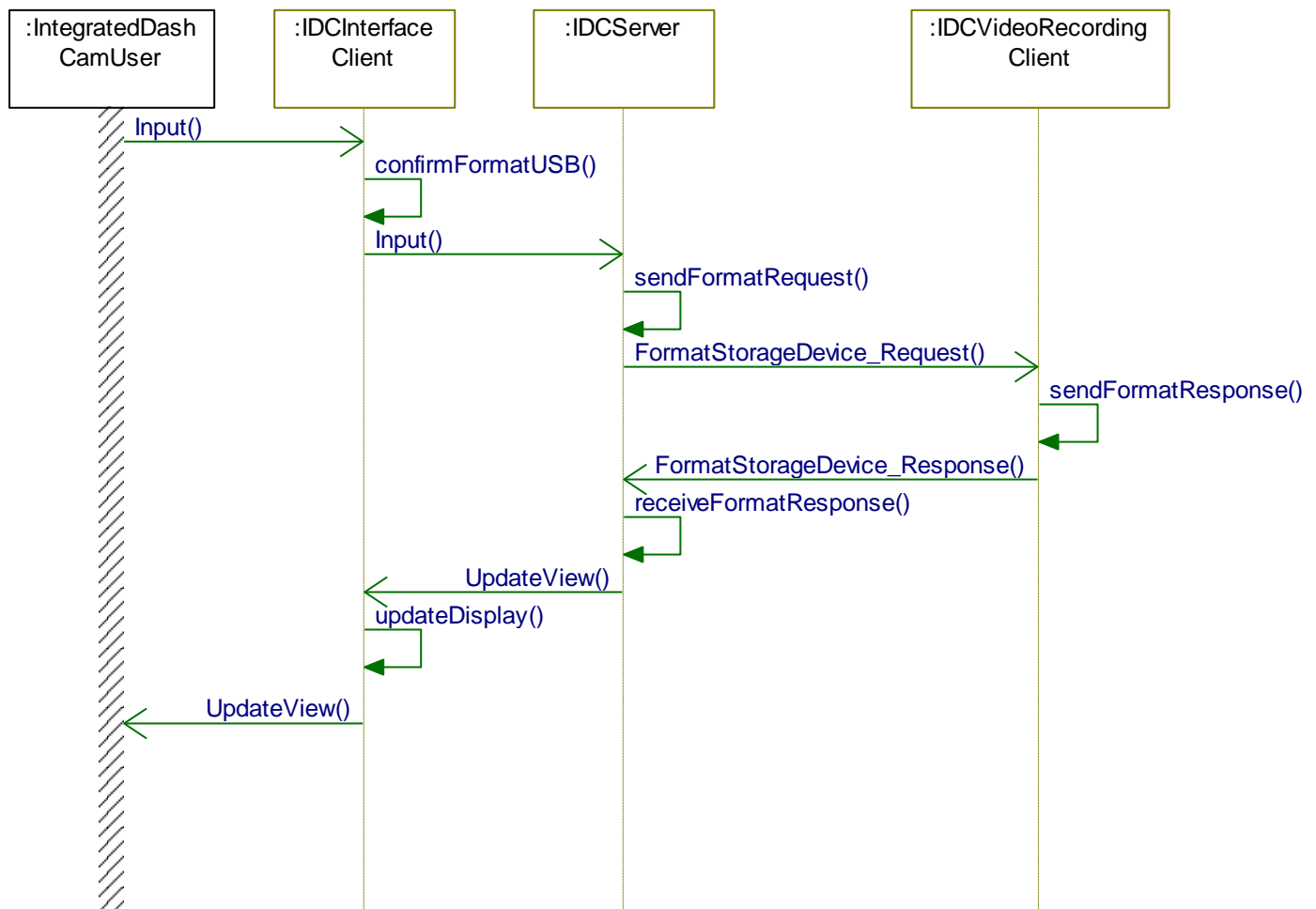


## 4.3.3.2.3 IDCAM-SD-REQ-460442/A-Display USB Storage



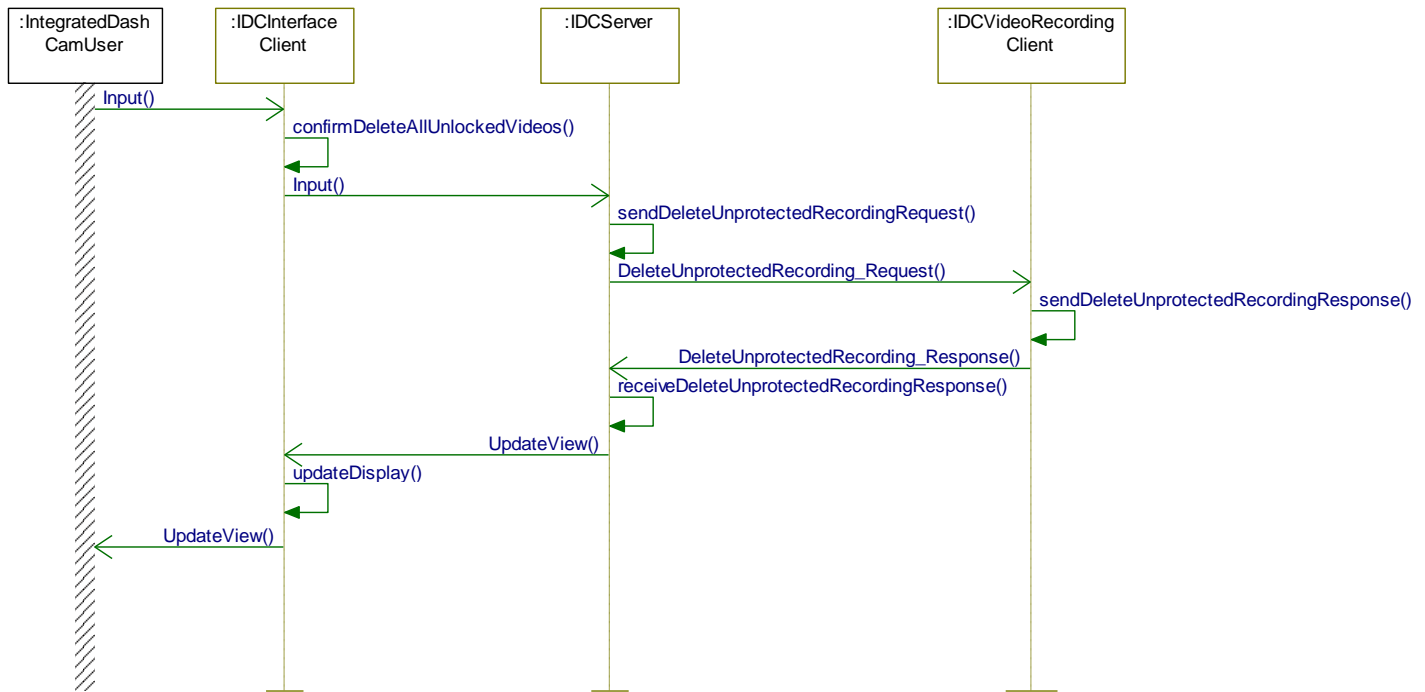


## 4.3.3.2.4 IDCAM-SD-REQ-460444/A-Format USB





#### 4.3.3.2.5 IDCAM-SD-REQ-460446/A-Delete All Unlocked Videos



### 4.4 IDCAM-FUN-REQ-414973/A-Video Controls

#### 4.4.1 Requirements

##### 4.4.1.1 IDCAM-REQ-456068/A-Playback On HMI

IDCInterfaceClient shall allow the user to select the video file and playback on the center stack HMI. When user selects to play the video file, IDCServer shall send StartPlayback request to IDCVideoRecordingClient and set values in the request as below:  
CameraViewName = AR\_RGB\_CAMERA;  
SegmentNumber = SegmentNumber (leave blank for first available);  
RecordingID = recording\_session\_id received via ListRecordingSessions\_Rsp.  
IDCInterfaceClient shall notify the user upon receiving StartPlayback\_Rsp RequestStatus = "Fail" from IDCVideoRecordingClient.

##### 4.4.1.2 IDCAM-REQ-456069/A-Controls during Video Playback

IDCInterfaceClient shall provide the user controls during video playback including: Pause, Resume, Protect/Unprotect, Delete, Return to Menu, Previous/Next and a video progress bar that can be used to jump forward and backward.

##### 4.4.1.3 IDCAM-REQ-456070/A-Pause Playback

IDCInterfaceClient shall allow the user to pause the video playback. When user selects to pause the video, IDCServer shall send PausePlayback request to IDCVideoRecordingClient and set RecordingID as recording\_session\_id received via ListRecordingSessions\_Rsp in the request.



#### 4.4.1.4 IDCAM-REQ-456071/A-Resume Playback

IDCInterfaceClient shall allow the user to resume the video playback.

When user selects to resume the video playback, IDCServer shall send ResumePlayback request to IDCVideoRecordingClient and set RecordingID as recording\_session\_id received via ListRecordingSessions\_Rsp in the request.

#### 4.4.1.5 IDCAM-REQ-456072/A-Stop Playback

IDCInterfaceClient shall allow the user to return to menu to stop the video playback.

When user selects to return to menu, IDCServer shall send StopPlayback request to IDCVideoRecordingClient and set RecordingID as recording\_session\_id received via ListRecordingSessions\_Rsp in the request.

#### 4.4.1.6 IDCAM-REQ-456073/A-Jump Forward/Backward

IDCInterfaceClient shall allow the user to jump forward/backward the video during playback.

When user selects to jump forward/backward the video, IDCServer shall send ManagePlayback request to IDCVideoRecordingClient and set values in the request as below:

Skip\_Delta = -30 (backward) or 30 (forward);

goto\_Time = used for seek;

RecordingID = recording\_session\_id received via ListRecordingSessions\_Rsp.

#### 4.4.1.7 IDCAM-REQ-456074/A-Previous/Next Video

IDCInterfaceClient shall allow the user to select previous/next video during playback.

When user selects previous/next video, IDCServer shall send ManagePlayback request to IDCVideoRecordingClient and set values in the request as below:

goto\_segment = segment\_number received via ListRecordingSegments\_Rsp;

RecordingID = recording\_session\_id received via ListRecordingSessions\_Rsp.

#### 4.4.1.8 IDCAM-REQ-456075/A-Protect/Unprotect Videos

IDCInterfaceClient shall allow the user to protect/unprotect a recording session or segment.

When user selects to protect/unprotect the selected recording session or segment, IDCServer shall send ProtectRecording request to IDCVideoRecordingClient and set values in the request as below:

SegmentNumber = segment\_number received via ListRecordingSegments\_Rsp (leave blank for entire session);

RecordingID = recording\_session\_id received via ListRecordingSessions\_Rsp;

Protect = NotReadOnly/ReadOnly.

#### 4.4.1.9 IDCAM-REQ-456076/A-Delete Videos

IDCInterfaceClient shall allow the user to delete a recording session or segment.

When user selects to delete the selected recording session or segment, IDCServer shall send DeleteRecording request to IDCVideoRecordingClient and set values in the request as below:

Segment\_number = segment\_number received via ListRecordingSegments\_Rsp (leave blank for entire session);

RecordingID = recording\_session\_id received via ListRecordingSessions\_Rsp.

IDCInterfaceClient shall notify the user upon receiving DeleteRecording\_Rsp RequestStatus = "Fail" from IDCVideoRecordingClient.



#### 4.4.1.10 IDCAM-REQ-456077/A-Preconditions of Video Playback

The IDC feature shall only be capable of video playback when GearLevelPosition\_St = "Park".

#### 4.4.1.11 IDCAM-REQ-456078/A-Overlay Metadata upon Video Playback

IDCServer shall request to overlay the corresponding metadata on the video file during playback.

### 4.4.2 Use Cases

#### 4.4.2.1 *IDCAM-UC-REQ-447666/A-Videos – Playback*

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is turned on Vehicle is in Park mode (GearLevelPosition_St = "Park") IDCInterfaceClient displays list of recording segments
<b>Scenario Description</b>	User selects a video file and clicks on "Play" button. IDCServer sends StartPlayback_Rq to IDCVideoRecordingClient and receives response via StartPlayback_Rsp. IDCServer receives video stream from IDCVideoRecordingClient and sends to IDCInterfaceClient.
<b>Post-conditions</b>	User can playback the selected video file on the IDCInterfaceClient.
<b>List of Exception Use Cases</b>	StartPlayback_Rsp RequestStatus = "Fail", IDCInterfaceClient notifies the user.
<b>Interfaces</b>	HMI, Ethernet, CAN

#### 4.4.2.2 *IDCAM-UC-REQ-447667/A-Videos – Pause the Playback*

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is turned on Vehicle is in Park mode (GearLevelPosition_St = "Park") A video file is currently played back on HMI
<b>Scenario Description</b>	User selects to pause the playback on the IDCInterfaceClient. IDCServer sends PausePlayback_Rq to IDCVideoRecordingClient. IDCServer receives response from IDCVideoRecordingClient.
<b>Post-conditions</b>	Video playback is paused on the IDCInterfaceClient.
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	HMI, Ethernet

#### 4.4.2.3 *IDCAM-UC-REQ-447668/A-Videos – Resume the Playback*

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is turned on Vehicle is in Park mode (GearLevelPosition_St = "Park") Video playback is paused on HMI
<b>Scenario Description</b>	User selects to resume the playback on the IDCInterfaceClient. IDCServer sends ResumePlayback_Rq to IDCVideoRecordingClient. IDCServer receives response from IDCVideoRecordingClient.





<b>Post-conditions</b>	Video file resumes to playback on the IDCInterfaceClient.
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	HMI, Ethernet

#### 4.4.2.4 IDCAM-UC-REQ-447669/A-Videos – Stop the Playback

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is turned on Vehicle is in Park mode (GearLevelPosition_St = "Park") A video file is currently played back on HMI
<b>Scenario Description</b>	User selects to return back to the menu on the IDCInterfaceClient. IDCServer sends StopPlayback_Rq to IDCVideoRecordingClient. IDCServer receives response from IDCVideoRecordingClient.
<b>Post-conditions</b>	Video playback is stopped on the IDCInterfaceClient.
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	HMI, Ethernet

#### 4.4.2.5 IDCAM-UC-REQ-447670/A-Videos – Jump Forward/Backward

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is turned on Vehicle is in Park mode (GearLevelPosition_St = "Park") A video file is currently played back on HMI
<b>Scenario Description</b>	User selects to jump forward or backward. IDCServer sends ManagePlayback_Rq to IDCVideoRecordingClient. IDCServer receives response from IDCVideoRecordingClient.
<b>Post-conditions</b>	Video playback is jumped forward/backward for 30 seconds.
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	HMI, Ethernet

#### 4.4.2.6 IDCAM-UC-REQ-448437/A-Videos – Previous/Next

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is turned on Vehicle is in Park mode (GearLevelPosition_St = "Park") A video file is currently played back on HMI
<b>Scenario Description</b>	User selects the previous or next video segment. IDCServer sends ManagePlayback_Rq to IDCVideoRecordingClient. IDCServer receives response from IDCVideoRecordingClient.
<b>Post-conditions</b>	User is able to playback the previous/next recording segment.
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	HMI, Ethernet

**4.4.2.7 IDCAM-UC-REQ-447671/A-Lock/Unlock Videos**

<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is turned on Vehicle is in park mode (GearLevelPosition_St = "Park") IDCInterfaceClient displays list of recording sessions or segments
<b>Scenario Description</b>	User clicks on "lock/unlock" button to toggle protected status on the selected recording session or segment. IDCServer sends ProtectRecording_Rq with protect Boolean set to opposite of current state to IDCVideoRecordingClient. IDCVideoRecordingClient processes the request and sends back response. IDCServer receives ProtectRecording_Rsp and IDCInterfaceClient updates the display.
<b>Post-conditions</b>	Video files can be successfully locked/unlocked.
<b>List of Exception Use Cases</b>	If ProtectRecording_Rsp RequestStatus = "Fail", display should remain as it was.
<b>Interfaces</b>	HMI, Ethernet

**4.4.2.8 IDCAM-UC-REQ-447672/A-Delete Videos**

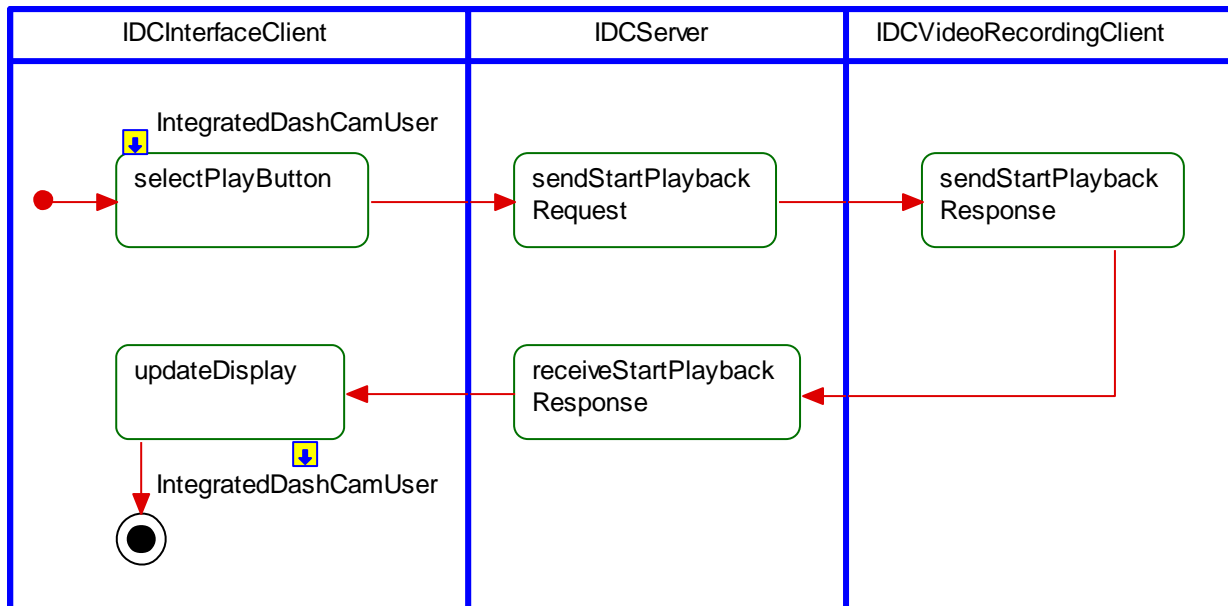
<b>Actors</b>	IDC User, IDCInterfaceClient, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is turned on Vehicle is in park mode (GearLevelPosition_St = "Park") IDCInterfaceClient displays list of recording sessions or segments There're no locked video files within the recording session that user selected or the selected segment is not locked
<b>Scenario Description</b>	User selects a segment or a recording session and then clicks on "Delete" button. IDCServer sends DeleteRecording_Rq to IDCVideoRecordingClient and receives response via DeleteRecording_Rsp. If DeleteRecording_Rsp RequestStatus = "Success", IDCInterfaceClient updates list displayed with now smaller list of videos.
<b>Post-conditions</b>	User can select the segment or recording session which he wants to delete, and videos can be removed
<b>List of Exception Use Cases</b>	E1: Selected segment is locked or some of the segments within the selected recording session are locked. IDCInterfaceClient displays a dialog box asking for user's confirmation. User selects "Yes" and IDCServer sends DeleteRecording_Rq to IDCVideoRecordingClient. IDCVideoRecordingClient processes the request and sends response back. IDCServer receives the response and IDCInterfaceClient updates list displayed with now smaller list of videos. E2: User selects "No" when the dialog box shows up. No action is taken. E3: DeleteRecording_Rsp RequestStatus = "Fail", IDCInterfaceClient displays a text indicating the video cannot be deleted.
<b>Interfaces</b>	HMI, Ethernet



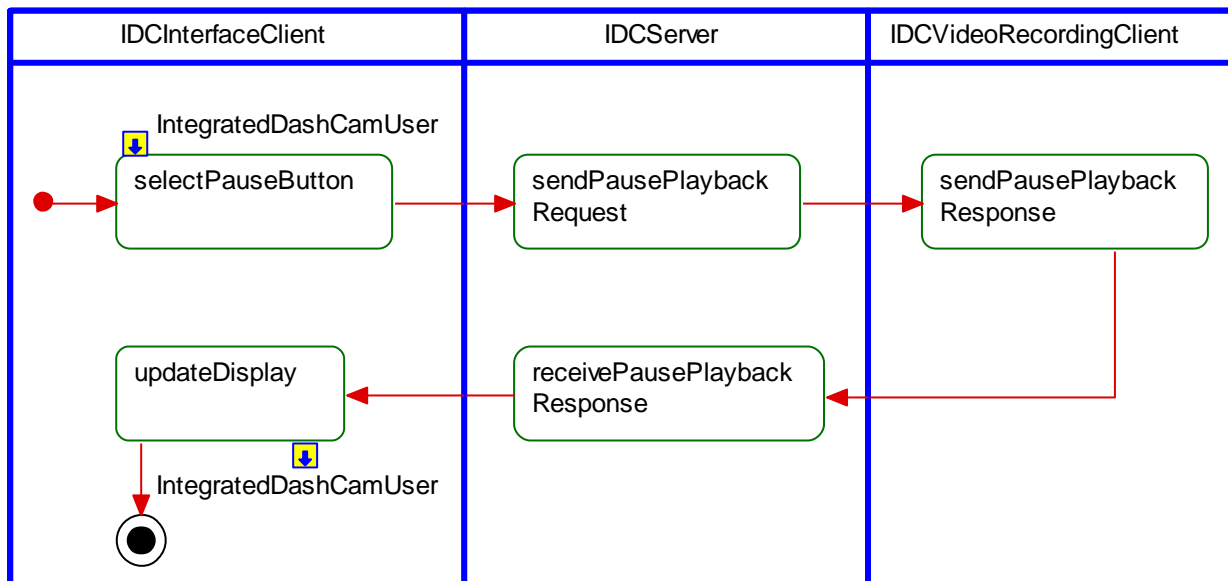
#### 4.4.3 White Box View

##### 4.4.3.1 Activity Diagrams

###### 4.4.3.1.1 IDCAM-ACT-REQ-414974/A-Videos - Playback

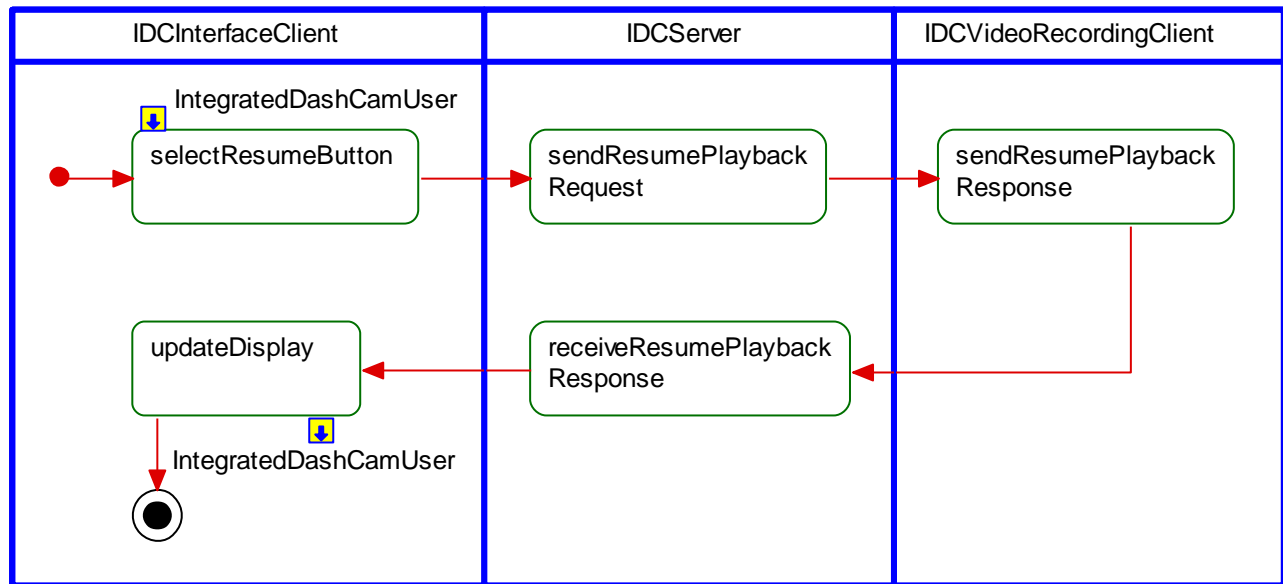


###### 4.4.3.1.2 IDCAM-ACT-REQ-460457/A-Videos - Pause the Playback

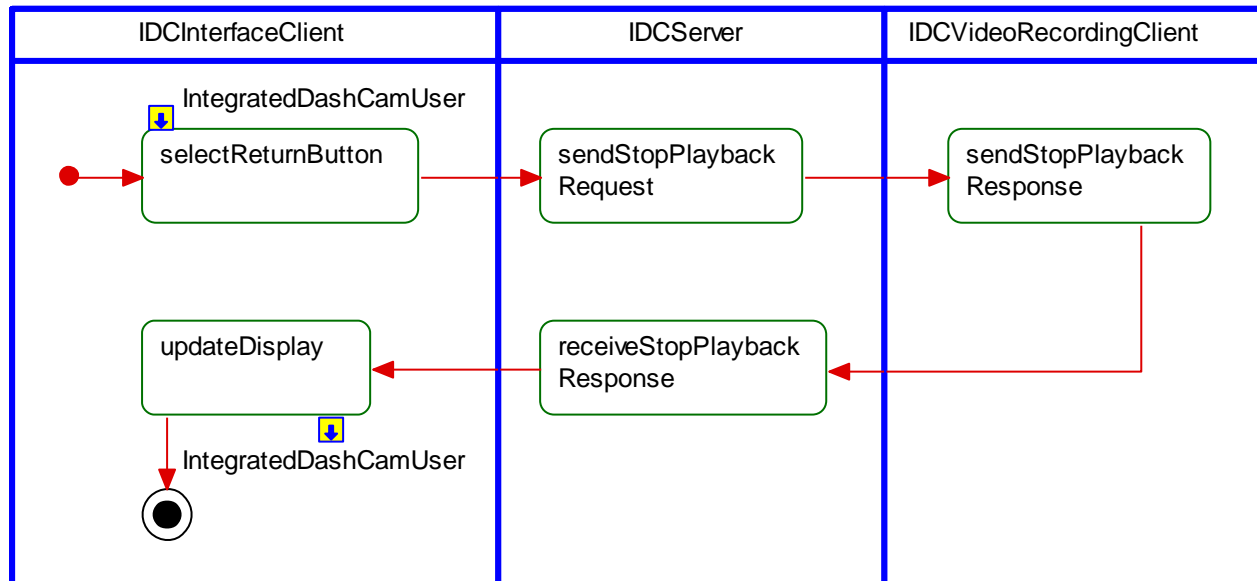




## 4.4.3.1.3 IDCAM-ACT-REQ-460459/A-Videos - Resume the Playback

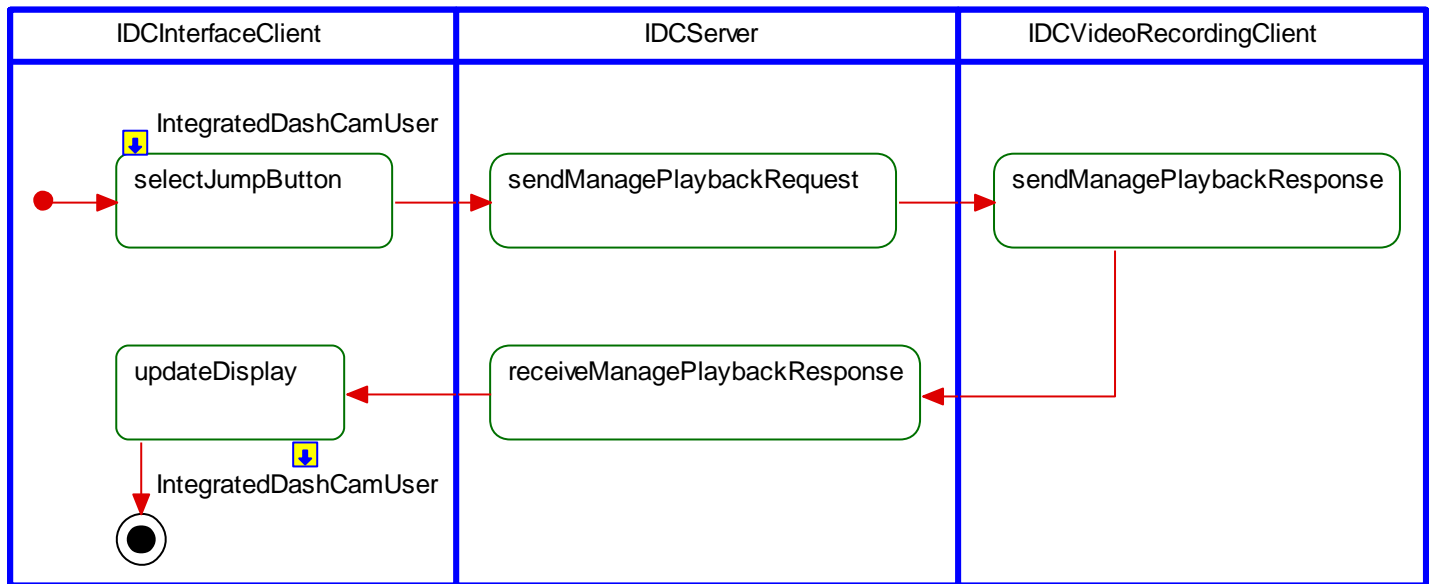


## 4.4.3.1.4 IDCAM-ACT-REQ-460461/A-Videos - Stop the Playback

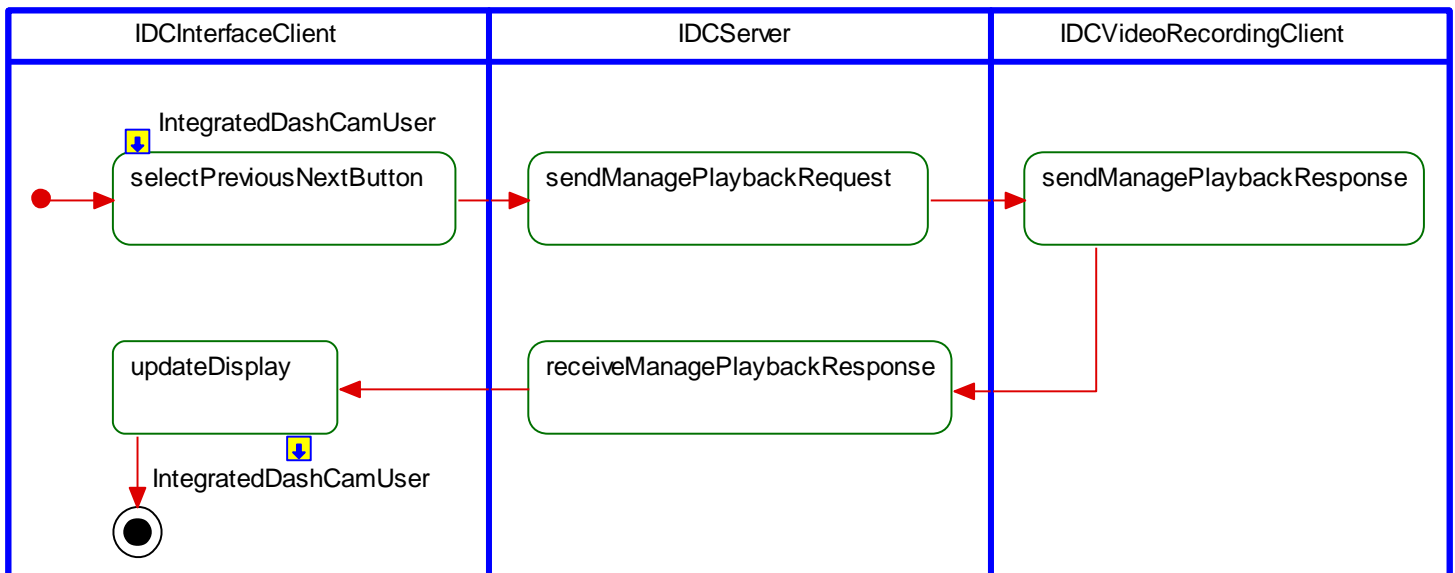




## 4.4.3.1.5 IDCAM-ACT-REQ-460463/A-Videos - Jump Forward/Backward

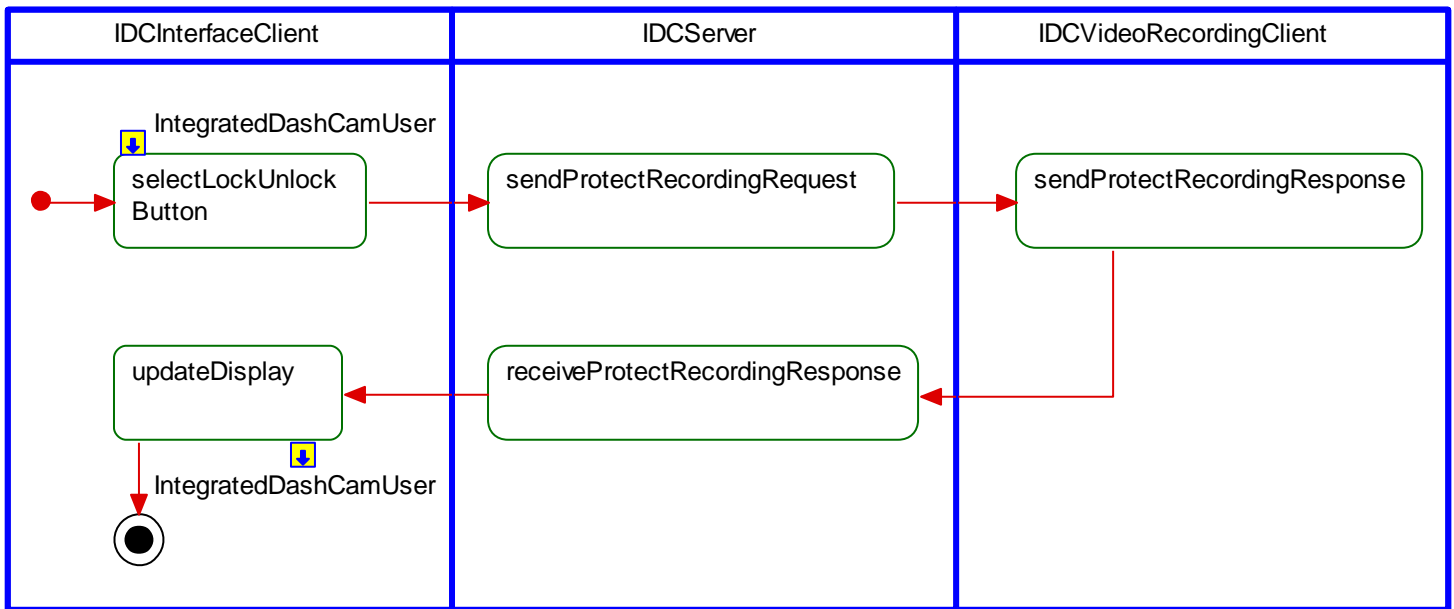


## 4.4.3.1.6 IDCAM-ACT-REQ-460465/A-Videos - Previous/Next

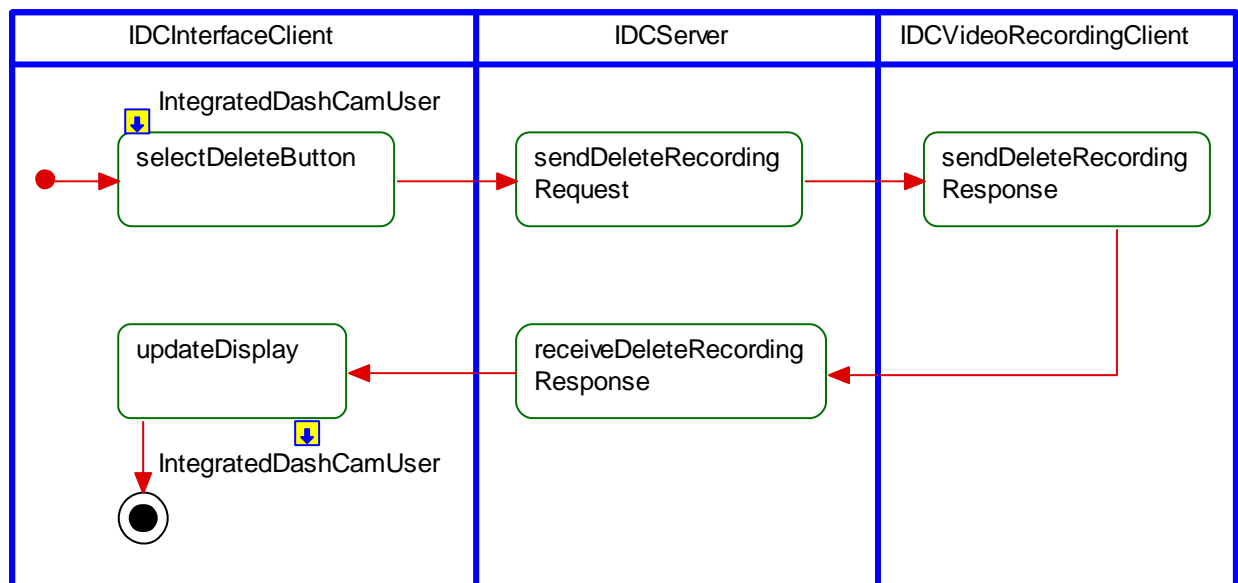




## 4.4.3.1.7 IDCAM-ACT-REQ-460467/A-Lock/Unlock Videos



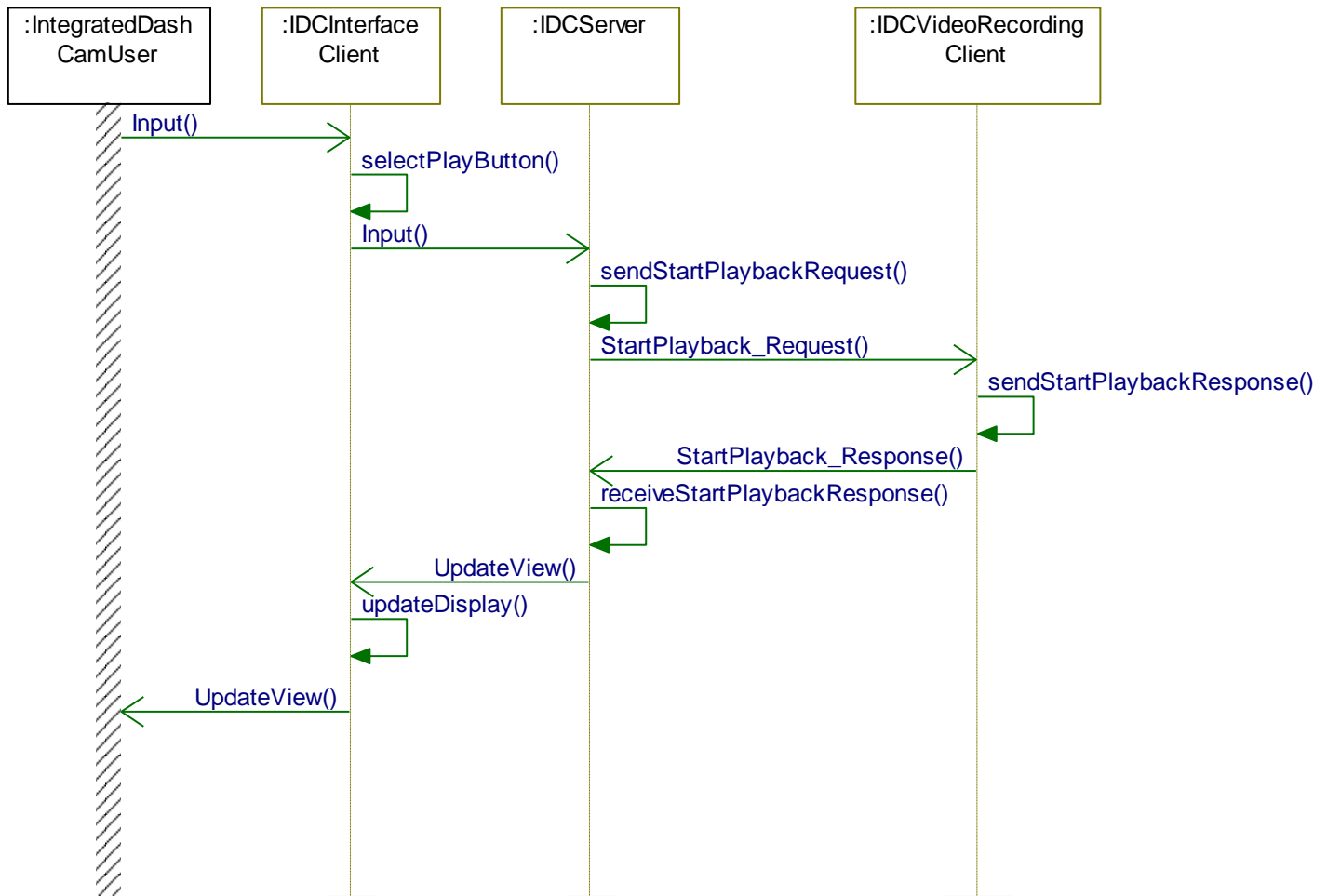
## 4.4.3.1.8 IDCAM-ACT-REQ-460469/A-Delete Videos





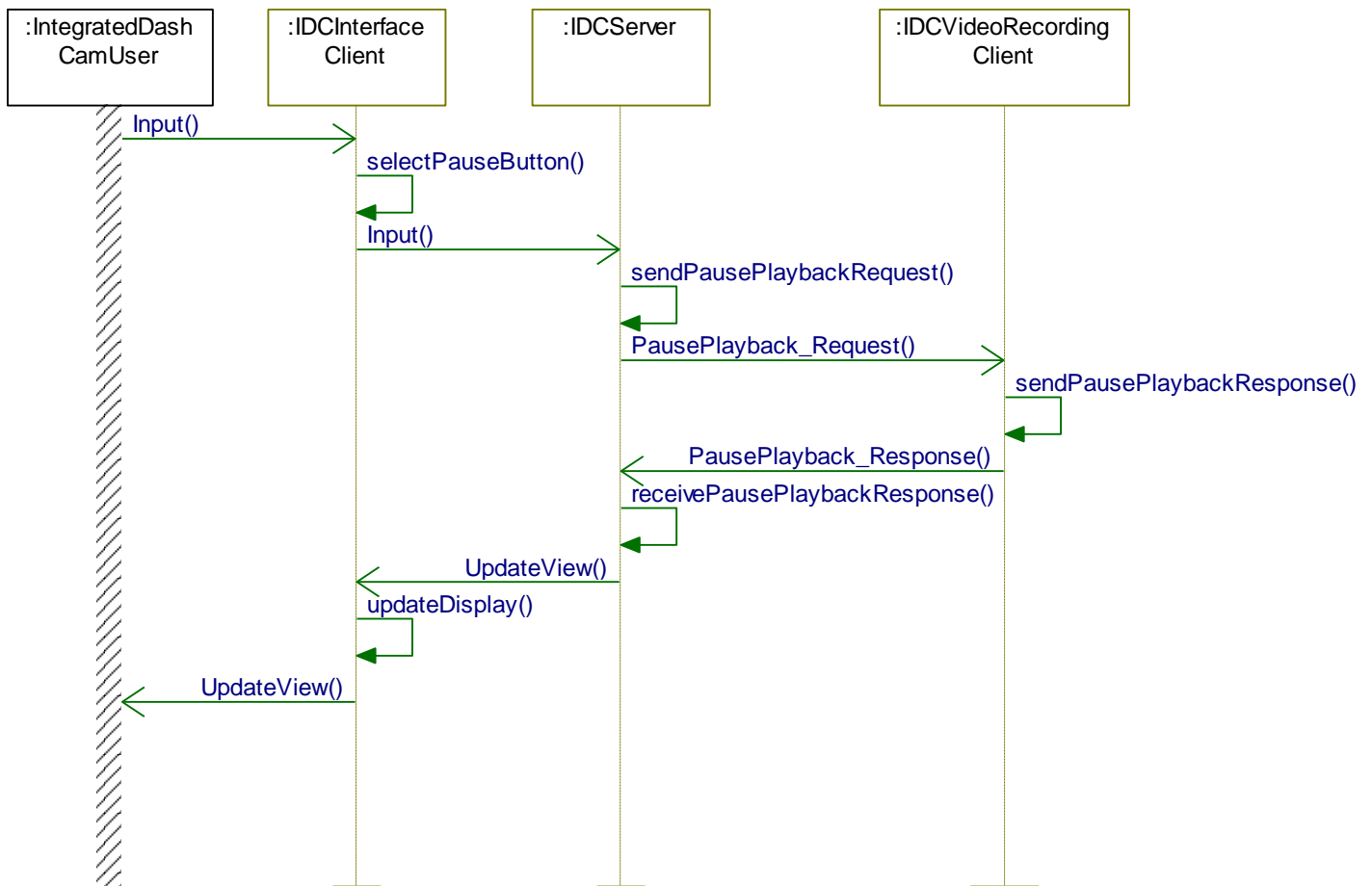
#### 4.4.3.2 Sequence Diagrams

##### 4.4.3.2.1 IDCAM-SD-REQ-414975/A-Videos - Playback





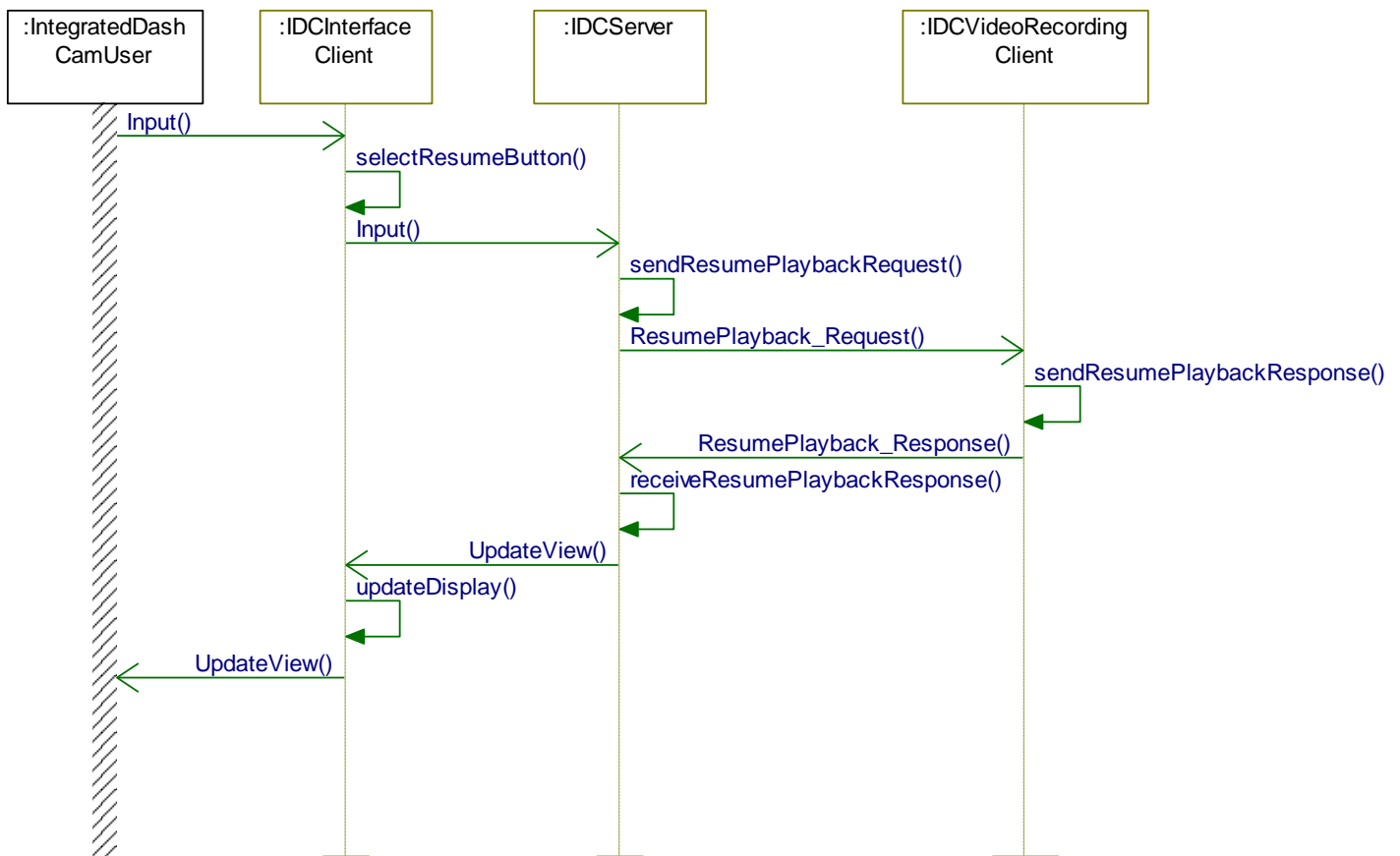
## 4.4.3.2.2 IDCAM-SD-REQ-460458/A-Videos - Pause the Playback





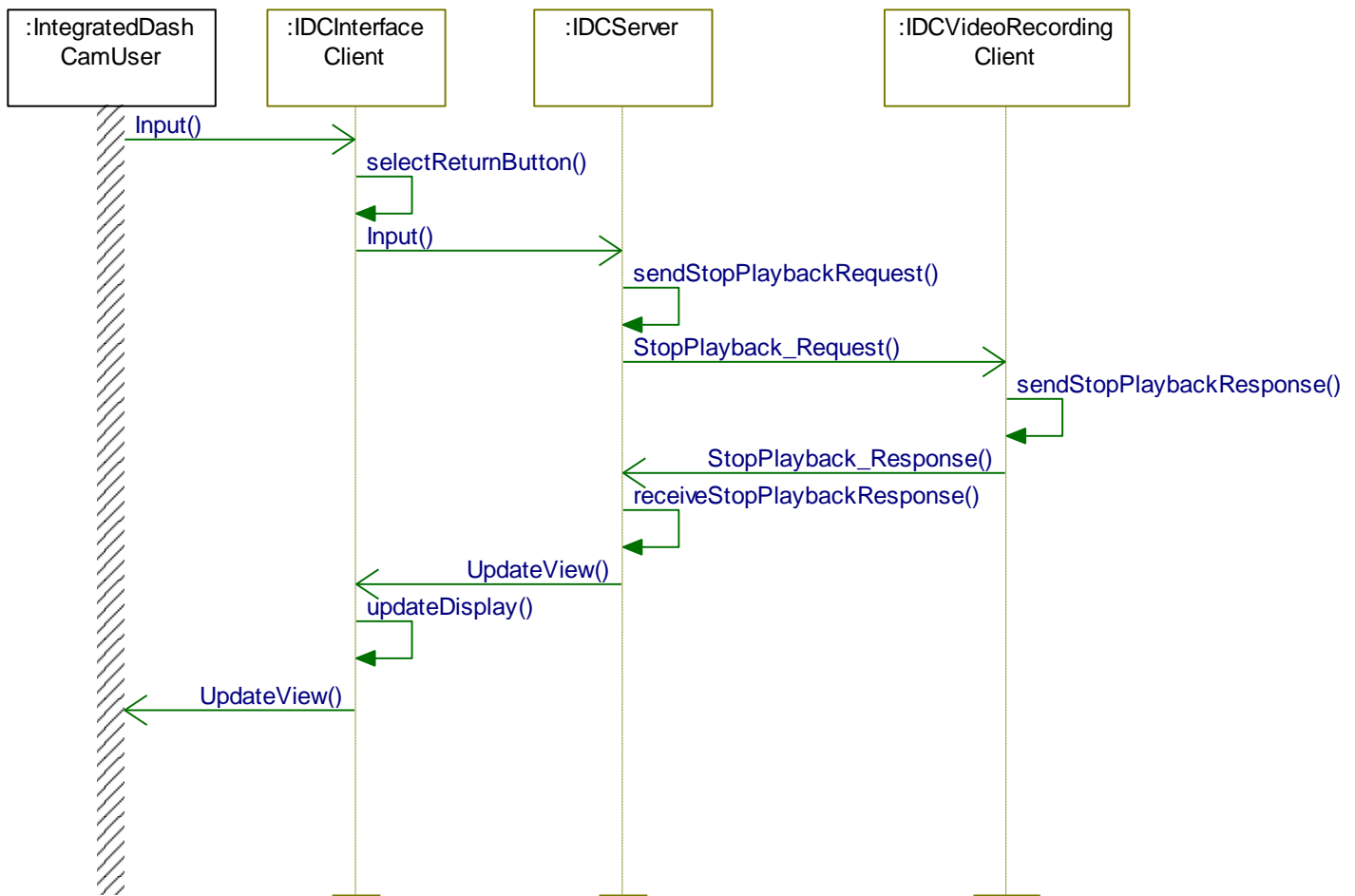


## 4.4.3.2.3 IDCAM-SD-REQ-460460/A-Videos - Resume the Playback



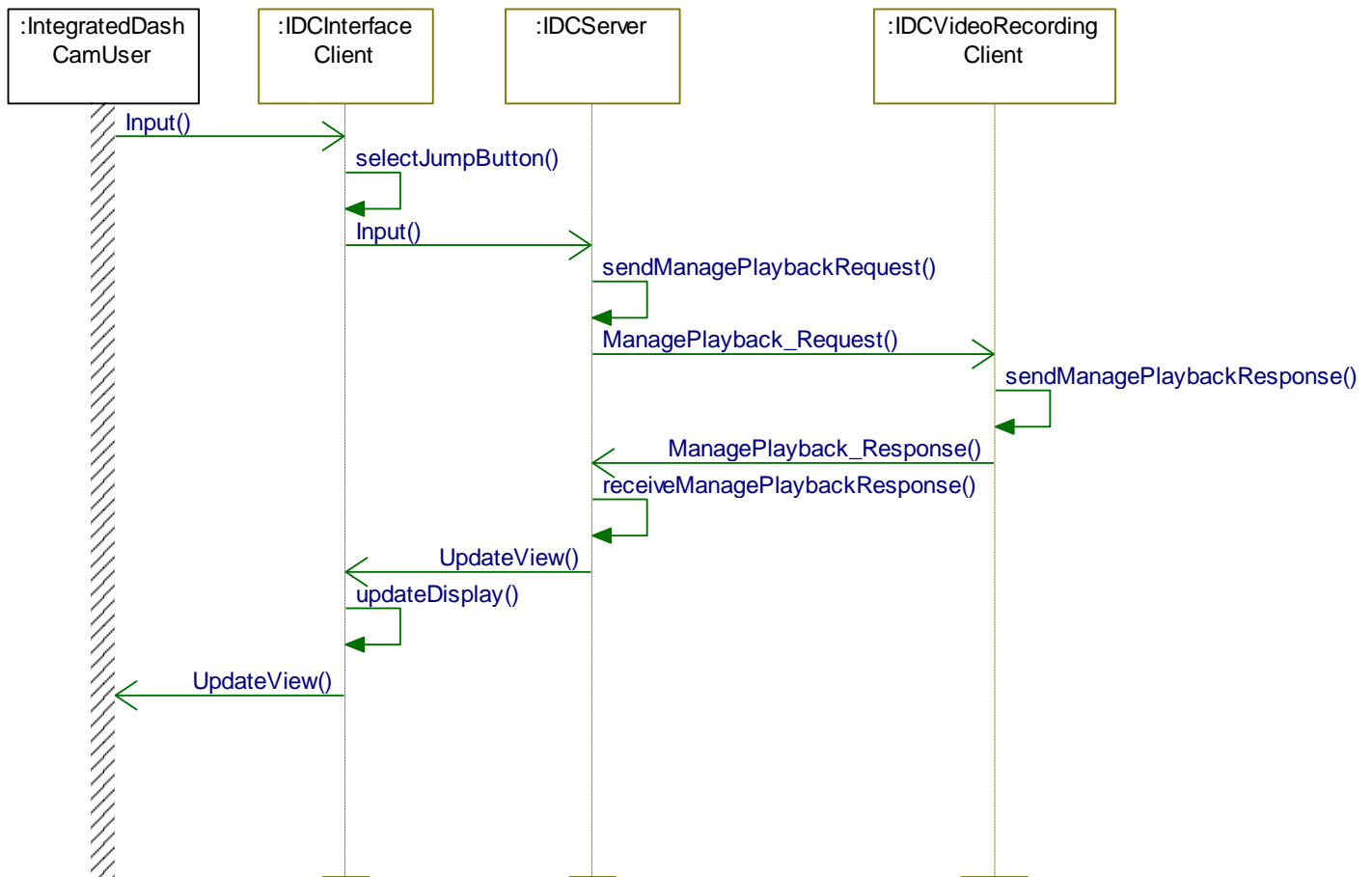


## 4.4.3.2.4 IDCAM-SD-REQ-460462/A-Videos - Stop the Playback



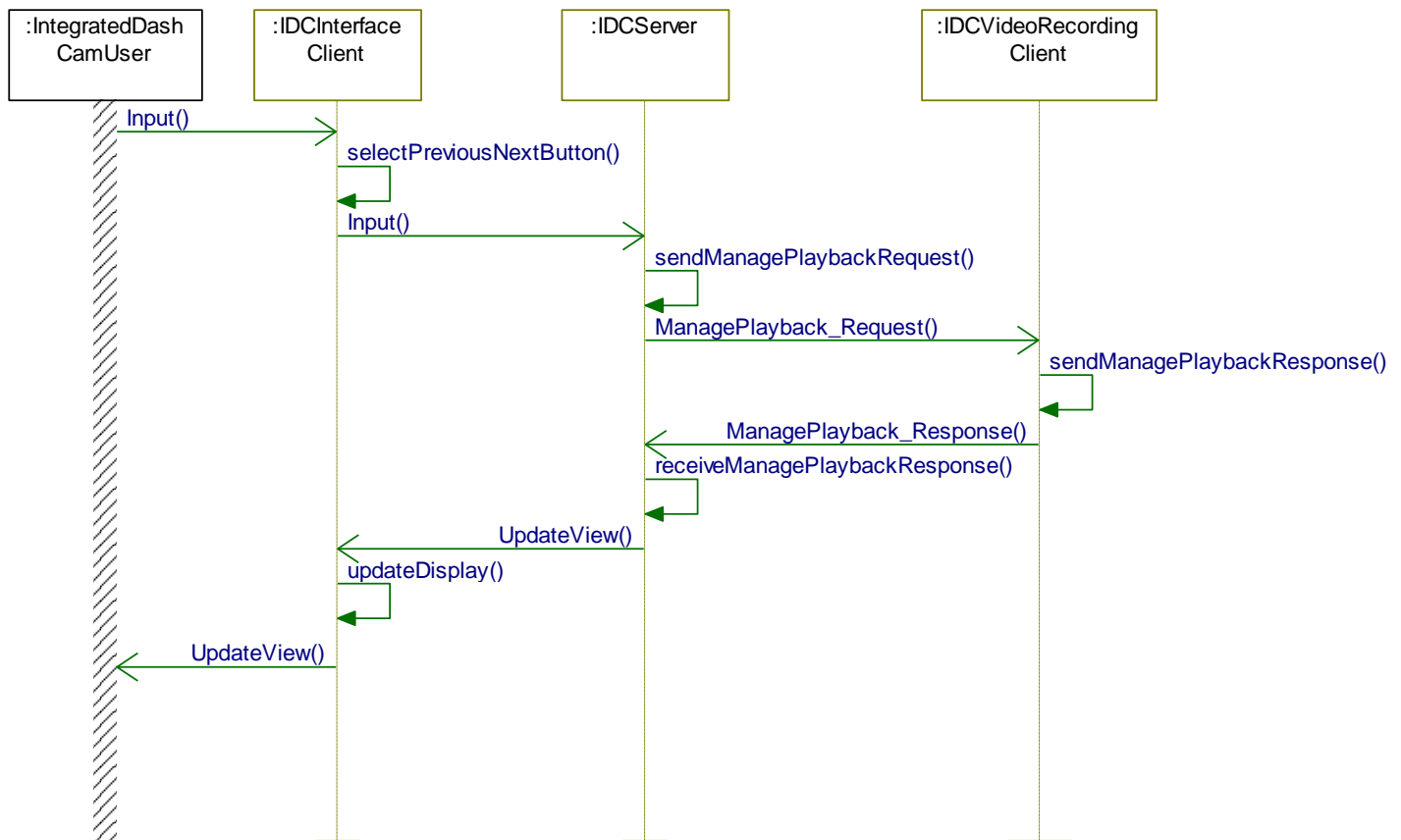


## 4.4.3.2.5 IDCAM-SD-REQ-460464/A-Videos - Jump Forward/Backward



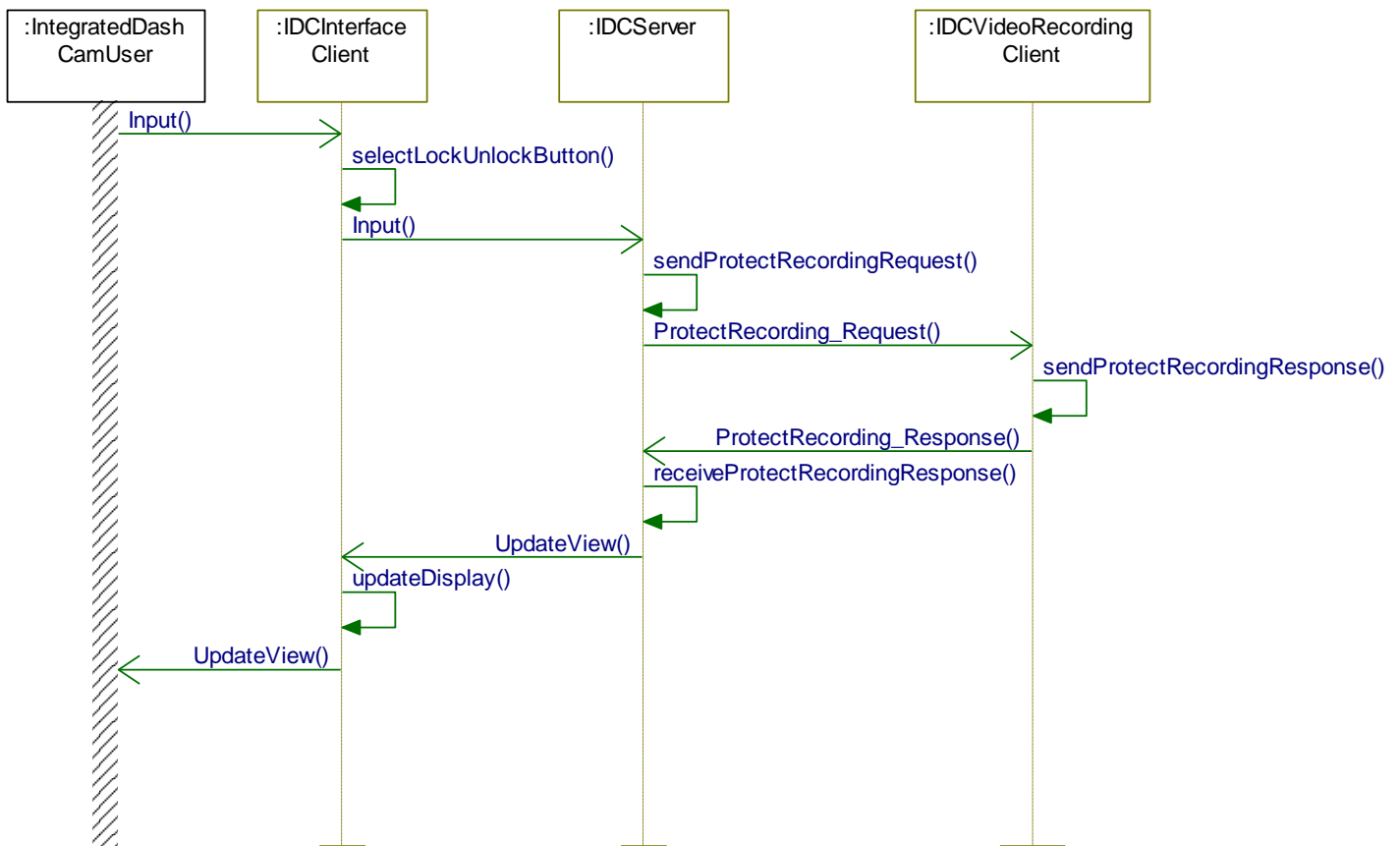


## 4.4.3.2.6 IDCAM-SD-REQ-460466/A-Videos - Previous/Next



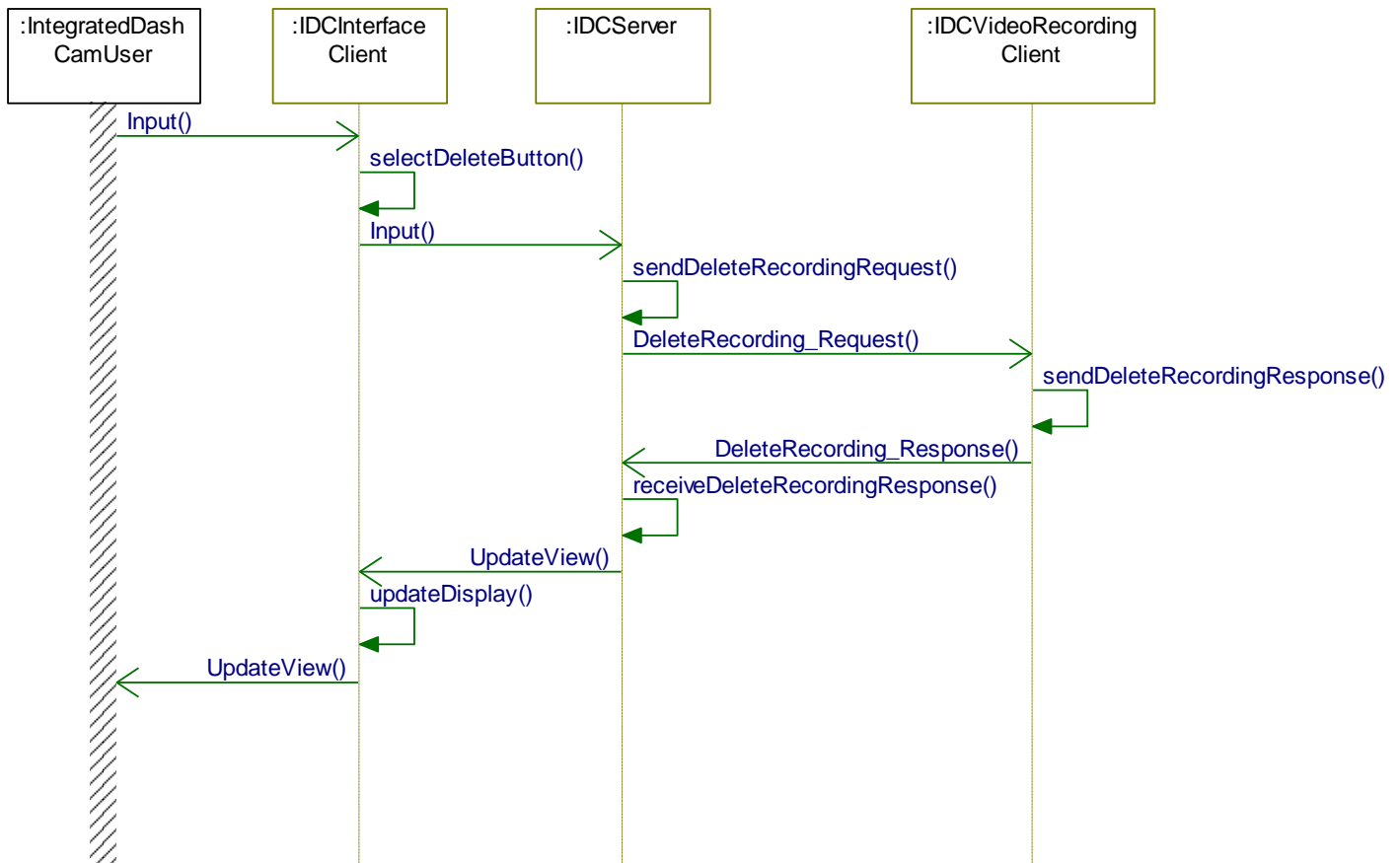


## 4.4.3.2.7 IDCAM-SD-REQ-460468/A-Lock/Unlock Videos





#### 4.4.3.2.8 IDCAM-SD-REQ-460470/A-Delete Videos



### 4.5 IDCAM-FUN-REQ-414979/A-Protect Recorded Files Automatically

#### 4.5.1 Requirements

##### 4.5.1.1 IDCAM-REQ-456081/A-Protect Recordings Automatically

IDCServer shall convert recorded video files to Read-Only when the value of FRCC\_St is not zero.

#### 4.5.2 Use Cases

##### 4.5.2.1 IDCAM-UC-REQ-447673/A-Protect Recorded Files Automatically

<b>Actors</b>	IDC User, IDCServer, IDCVideoRecordingClient
<b>Pre-conditions</b>	Ignition is Run/Start Infotainment system is turned on IDCServer receives FRCC Severity value and the value is not zero <b>Note:</b> Please reference to MD-REQ-385133 in First Notification of Loss SPSS for details.
<b>Scenario Description</b>	IDCServer sends ProtectRecording_Rq to IDCVideoRecordingClient with protect value set as "ReadOnly" for current recording. IDCVideoRecordingClient processes the request and sends response back via ProtectRecording_Rsp.



	If ProtectRecording_Rsp RequestStatus = "Success", IDCServer will update icon to display locked status.
<b>Post-conditions</b>	Current recorded file is protected automatically.
<b>List of Exception Use Cases</b>	E1: If ProtectRecording_Rsp RequestStatus = "Fail", IDCServer will NOT update icon display. Current recorded file will NOT be protected.
<b>Interfaces</b>	CAN, Ethernet



## 5 Appendix: Reference Documents

Reference #	Document Title
1	Video Recording and Playback SPSS
2	First Notification of Loss ECG SPSS
3	
4	
5	
6	
7	
8	