Research & Vehicle Technology
"Infotainment Systems Product Development"

Feature – Personal Portable Profiles InterfaceClient

Infotainment Subsystem Part Specific Specification (SPSS)

Version 1.1
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Version Date: December 10, 2021

FORD CONFIDENTIAL

Revision History

Date	Ver	Notes	
October 1, 2021	1.0	**Initial Release**	
December 10, 2021	1.1		
		STR-847034/B-Overview	MBORREL4: Updated to include Enhanced Memory dependency
		STR-847035/B-Terms and Definitions	MBORREL4: Updated Abbreviations
		STR-920821/B-PPP	MBORREL4: Added REQ-466887
		MD-REQ-442699/B-pppUpdateWizardSettings	MBORREL4: Updated FeatureMap to account for different value types
		MD-REQ-442701/B-pppAccountID	MBORREL4: Updated AccountID chars
		MD-REQ-466887/A-pppDriverProfileDelete	MBORREL4: New req.
		STR-920824/B-PPP	MBORREL4: Added REQ-466887. Removed REQ-442697
		MD-REQ-425080/B-pppStoreProfileData	MBORREL4: Updated API based on Pers Service update
		MD-REQ-442699/B-pppUpdateWizardSettings	MBORREL4: Updated FeatureMap to account for different value types
		MD-REQ-442701/B-pppAccountID	MBORREL4: Updated AccountID chars
		MD-REQ-466887/A-pppDriverProfileDelete	MBORREL4: New req.
		PPP-REQ-406671/B-Powermode Conditions	MBORREL4: Corrected logical signal name
		PPP-UC-REQ-406749/B-In-Vehicle Personal Profile Deleted, Association Removed	MBORREL4: Updated description to remove mention of VIN
		STR-920829/B-Requirements	MBORREL4: Removed REQ-442721. Added REQ-470316, REQ-470317, REQ-470318
		PPP-REQ-434459/B-Central Portable Profile Creation – Store Request after Import	MBORREL4: Updated title and req.
		PPP-REQ-470316/A-Central Portable Profile Creation - Store Request when no Import	MBORREL4: New req.
		PPP-REQ-434461/B-Central Portable Profile Creation – Failed Response	MBORREL4: Added 'Invalid'
		PPP-REQ-470317/A-Delete Driver Profile - Request	MBORREL4: New req.
		PPP-REQ-470318/A-Delete Driver Profile - Response/Clear Data	MBORREL4: New req.
		STR-971530/B-Use Cases	MBORREL4: Added REQ-471225
		PPP-UC-REQ-448199/B-PPPInterfaceClient receives a Query All from PPPServer	MBORREL4: Updated preconditions
		PPP-UC-REQ-448200/B-PPPInterfaceClient receives a Query from PPPServer for a VIP setting	MBORREL4: Updated preconditions
		PPP-UC-REQ-448201/B-PPPInterfaceClient receives a Query from PPPServer for a	MBORREL4: Updated preconditions

	VIP setting not personalized by VIP	
	PPP-UC-REQ-471225/A-PPPInterfaceClient receives a Query from PPPServer (VIP Settings Cached)	MBORREL4: New req.
	STR-971531/B-Requirements	MBORREL4: Added REQ-471226
	PPP-REQ-471226/A-Cache VIP Settings	MBORREL4: New req.
	PPP-REQ-448208/B-Forwarding a Query All Request	MBORREL4: Updated req.
	PPP-REQ-448209/B-Forwarding a Query All Response	MBORREL4: Updated req.
	PPP-REQ-448210/B-Forwarding a Query Request	MBORREL4: Updated req.
	PPP-REQ-448211/B-Forwarding a Query Response	MBORREL4: Updated req.
	PPP-REQ-448214/B-Forwarding a Settings Update Notification	MBORREL4: Updated to include the API used to send settings update
	PPP-UC-REQ-406788/B-User disables Profile Lock	MBORREL4: Updated description
	STR-920834/B-Requirements	MBORREL4: Removed REQ-406680
	PPP-REQ-406681/B-Primary Authentication Retry Strategy	MBORREL4: Updated req.
	PPP-UC-REQ-406740/B-Associate Profile with FordPass Account During Creation	MBORREL4: Updated Post-conditions
	PPP-TMR-REQ-420640/B-T_Prompt2	MBORREL4: Updated timer
	PPP-REQ-420442/B-Prompt Options (Smart)	MBORREL4: Updated req.
	PPP-REQ-425129/B-Prompt Options (Simple)	MBORREL4: Updated req.

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1 Overview

Personal Portable Profiles is a cloud-based platform / ecosystem used to deliver a personalized in-vehicle experience that is seamlessly transferrable between Ford/Lincoln vehicles. This reduces the time and effort a customer needs to setup and customize their vehicle (a known pain point for subscription-based ownership). Creating a personalized experience will increase customer loyalty and provide a data platform for vehicle and cloud-based predictions, Digital Assistant, in-vehicle purchases and other monetization strategies. This in-vehicle profile will link with the centralized member profile for a common profile across all channels of the ecosystem.

Personal Portable Profiles is built upon the framework established by Personal Profiles (Enhanced Memory), and extends that in-vehicle experience to the cloud. Personal Profiles allows a customer to create an in-vehicle profile, from which a vast number of settings are automatically saved to their profile upon change (with the exception of positional settings, which must be saved manually for Personal Profiles). The way the customer interacts with those settings remains the same. See the Enhanced Memory SPSS for more details.

Personal Portable Profiles also includes positional AutoSave, which is the automatic saving of seat and positional setting adjustments made within a specified threshold (an improvement to Personal Profiles mentioned above). When the adjustment is outside of the specified threshold, the user is prompted for feedback. AutoSave is offered and maintained per profile, and the user can choose to enable/disable this function.

1.1 Terms and Definitions

| Abbreviation	Description
CAN	Controller Area Network
CCS	Customer Connectivity Setting
DID	Data Identifier
DSM	Driver Seat Module
ECG	Enhanced Central Gateway
FCI	Ford Cloud Interface
FNV2.0	Fully Networked Vehicle 2nd Generation
FTCP	Ford Telematics Communication Protocol
IPPT	IP pass-through
PAC	Phoenix Audio Controller
PDC	Phoenix Domain Controller
PII	Personal Identifiable Information
POI	Points of interest
PPP	Portable Personal Profile
PSM	Passenger Seat Module
RS	Rocket Setup
SDN	Service Delivery Network
SOA	Service Oriented Architecture
SPSS	Subsystem Part Specific Specification
WIR	Wireless Interface Router

Term	Description
PPP Settings	The settings or preferences selected by the user via the PPPOffBoardClient to be loaded in-vehicle
PPP Settings payload	Specifically referring to the FTCP payload containing the PPP Settings
SyncP	A Ford standard mechanism for secure communication.

2   Architectural Design

2.1   Boundary Diagram

2.1.1   PPP-BD-REQ-406790/A-PPP Boundary Diagram
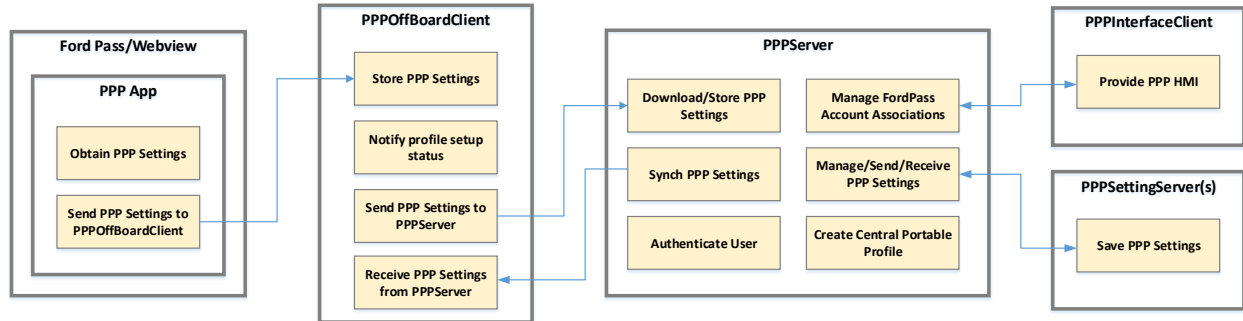
2.2   PPP-CLD-REQ-406791/A-Portable Profile Server

The Portable Profile Server (PPPServer) is responsible for the tasks listed below:

- Receive payload from PPPOffBoardClient
- Send acknowledgement to PPPOffBoardClient
- Parse payload and store to Central Portable Profile
- Send settings via relative interfaces to all PPPSettingServers
- Provide Profile Protection via Positive ID
- Synchronize Personal Profile settings with Central Portable Profile
- Send payload to PPPOffBoardClient for Synchronization
- Manage Profile to FordPass Account associations

Please review the implementation guide/ block diagram to locate the Portable Profile Server class.

2.3   PPP-CLD-REQ-406792/A-Portable Profile OffBoard Client

The Portable Profile OffBoardClient (PPPOffBoardClient) is responsible for the tasks listed below:

- Receive/Manage user input via FordPass
- Compile user preferences into payload
- Send payload to PPPServer
- Receive acknowledgement from PPPServer
- Receive payload from PPPServer for Export/Synchronization

Please review the implementation guide/ block diagram to locate the Portable Profile OffBoardClient class.

2.4   PPP-CLD-REQ-406793/A-Portable Profile Interface Client

The Portable Profile InterfaceClient (PPPInterfaceClient) is responsible for the tasks listed below:

- Receive and save settings from PPPServer
- Provide HMI information/screens for the feature
- Provide a means to perform Authentication
- Provide a user interface to enable/disable Positive ID
- Provide a user interface to associate/disassociate FordPass Account

Please review the implementation guide/ block diagram to locate the Portable Profile InterfaceClient class.

2.5   PPP-CLD-REQ-406794/A-Portable Profile Setting Server

The Portable Profile Setting Server (PPPSettingServer) is responsible for the tasks listed below:
- Receive settings from PPPServer
- Apply settings to local memory for requested profile
- Send settings to PPPServer OnChange and on demand (upon Export)

Please review the implementation guide/ block diagram to locate the Portable Profile Setting Server class.

2.6   PPP-CLD-REQ-420641/A-Auto Save Position Client

The Auto Save PositionClient (AutoSavePositionClient) is responsible for the tasks listed below:
- Receive Auto Save requests (save, exit, etc.) from PPPServer
- Request positional modules to perform actions (save/recall)

Please review the implementation guide/ block diagram to locate the Auto Save PositionClient class.

2.7   Physical Mapping of Classes

The table below shows an example of how the logical classes that make up the Portable Personal Profiles feature can be mapped into physical modules. This mapping is an example only and does not necessarily carryover to other carlines or vehicle architectures.

Logical Class	Physical Module (ECU)
PPPServer	ECG
PPPOffBoardClient	SDN/TMC (PPP-FI)
PPPInterfaceClient	PDC
PPPSettingServer(s)	PDC, PAC, DSP_Phoenix, etc.
AutoSavePositionClient	DSM

2.8   PPPInterfaceClient Interface

2.8.1   PPP-IIR-REQ-425085/A-PPPInterfaceClient_Rx

2.8.1.1   MD-REQ-027149/A-IgnitionStatus_St (TcSE ROIN-225464-1)

Message Type: Status

Signal used to indicate ignition state.

Name	Literals	Value	Description
Type	-	-	Indicates ignition state
	Unknown	0x0	
	Off	0x1	
	Accessory	0x2	
	Run	0x4	
	Start	0x8	
	Invalid	0xF	

2.8.1.2   MD-REQ-028253/A-GearLeverPosition_St (TcSE ROIN-282103-1)

Message Type: Status

Status used to indicate the current gear selected.

Name	Literals	Value	Description
Type	-	-	Used to indicate current gear selected.
	Park	0x0	
	Reverse	0x1	
	Neutral	0x2	
	Drive	0x3	
	Sport_DriveSport	0x4	
	Low	0x5	
	First	0x6	
	Second	0x7	
	Third	0x8	
	Fourth	0x9	
	Fifth	0xA	
	Sixth	0xB	
	Undefined_Treat_as_Fault	0xC	
	Undefined_Treat_as_Fault1	0xD	
	Unknown_Position	0xE	
	Fault	0xF	

2.8.1.3   MD-REQ-014025/A-VehicleSpeed_St (TcSE ROIN-223023-1)
Message Type: Status

Status used to indicate vehicle speed.

Name	Literals	Value	Description
Type	-	-	Indicates vehicle speed. Unit: kph Resolution:0.01 Offset:0
	kph	0x0 to 0xFFFF	

2.8.1.4   MD-REQ-086348/A-CarMode_St
Message Type: Status

Name	Literals	Value	Description
Type	-	-	Defines what car mode state is active.
	Normal	0x0	
	Factory	0x1	
	NotUsed	0x2	
	Transportation	0x3	

2.8.1.5   PPP

2.8.1.5.1   MD-REQ-420762/A-pppFeatureOp
This API is used to the request an operation of a PPP setting (change feature settings, query feature settings, etc.) from a PPPSettingServer. The PPPSettingServer also uses this API for its response.

Method Type	OneShot (asynchronous)

QoS Level	Default
Retained	Yes

R/O	Name		Type	Literals	Value	Description
Request						
R	PersCommand		Enum	-	-	Command being requested
				QUERY_ONE	0x0	
				QUERY_ALL	0x1	
				SET	0x2	
R	PersID		Enum	-	-	Personality profile is being accessed
				PROFILE_1	0x0	
				PROFILE_2	0x1	
				PROFILE_3	0x2	
				PROFILE_4	0x3	
				VEHICLE	0x4	
R	SettingsType		Enum	-	-	Type of setting being accessed
				USER_ PERSONALIZED	0x0	
				REJUVENATE_ RELAX	0x1	
				REJUVENATE_ INVIGORATE	0x2	
				SSW_WORK	0x3	
Rep	FeatureMap	FeatureCode	uint32	-	0x0000 – 0xFFFF	Feature code/number being requested
		FeatureValue	uint32	-	0x0000 – 0xFFFF	Feature value being requested
Response						
R	ResponseCode		Enum	-	-	Response to requested operation
				SUCCESS	0x0	
				FAILED	0x1	
				INVALID	0x2	
R	ParameterCount		uint32	-	0x0000 – 0xFFFF	Parameter Count of the response
Rep	FeatureMap	FeatureCode	uint32	-	0x0000 – 0xFFFF	Feature code/number being requested
		FeatureValue	uint32	-	0x0000 – 0xFFFF	Feature value being requested

2.8.1.5.2 MD-REQ-442699/B-pppUpdateWizardSettings

This API is used to send PPP settings to the PPPInterfaceClient for use in the Setup Wizard. The PPPInterfaceClient also uses this API for its response.

Method Type	OneShot (asynchronous)
QoS Level	Default
Retained	Yes

R/O	Name	Type	Literals	Value	Description
Request					
R	ProfileImported	Bool	-	0/1	0 - No profile imported 1 - Profile imported

		FeatureCode	int16	-	0x0000 – 0xFFFF	Feature code/number being requested
Rep	FeatureMap	FeatureValue	uint16	-	0x0000 – 0xFFFF	Feature value being requested
			int16	-	-	
			bytes	-	0 - 64k	
			float	-	-	
			string	-	0 - 200 chars	
			double	-	-	
Response						
R	ResponseCode		Enum	-	-	Response to requested operation
				SUCCESS	0x0	
				FAILED	0x1	

2.8.1.5.3 MD-REQ-442701/B-pppAccountID

This API is used to send AccountID information to the PPPServer. The PPPServer also uses this API for its response.

Method Type	Fire&Forget)				
QoS Level	Default				
Retained	No				

R/O	Name	Type	Literals	Value	Description
Request					
R	accountID	string	-	40 chars	AccountID per the authenticated FordPass credentials (up to 40 chars)
R	newProfile	Bool	-	0/1	0 – Not a new profile being created 1 – New profile being created
R	PersID	Enum	-	-	Personality profile being associated
			PROFILE_1	0x0	
			PROFILE_2	0x1	
			PROFILE_3	0x2	
			PROFILE_4	0x3	
			VEHICLE	0x4	
Response					
R	ResponseCode	Enum	-	-	Response to request
			Ok	0x0	
			Already In Use	0x1	
R	PersID	Enum	-	-	Personality profile already associated to Account ID. N/A if ResponseCode = Ok
			PROFILE_1	0x0	
			PROFILE_2	0x1	
			PROFILE_3	0x2	
			PROFILE_4	0x3	

2.8.1.5.4   MD-REQ-442698/A-pppFordPassAssociationStatusBroadcast

This API is used to broadcast the status of a personal portable profile association to a FordPass Account.

Method Type	OnChange				
QoS Level	Default				
Retained	Yes				
R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					
-	-	-	-	-	N/A
Response					
R	Profile1	Enum	-	-	Profile1 Broadcast status
			Not Associated	0x0	
			Associated	0x1	
R	Profile2	Enum	-	-	Profile2 Broadcast status
			Not Associated	0x0	
			Associated	0x1	
R	Profile3	Enum	-	-	Profile3 Broadcast status
			Not Associated	0x0	
			Associated	0x1	
R	Profile4	Enum	-	-	Profile4 Broadcast status
			Not Associated	0x0	
			Associated	0x1	

2.8.1.5.5   MD-REQ-442700/A-pppImportStatusBroadcast

This API is used to broadcast the profile settings import status.

Method Type	OnChange				
QoS Level	Default				
Retained	No				
R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					
-	-	-	-	-	N/A
Response					
R	Status	Enum	-	-	Broadcast status
			None	0x0	
			In Progress	0x1	
			Complete - Success	0x2	
			Complete - Partial	0x3	
			Complete – Fail	0x4	

2.8.1.5.6   MD-REQ-466887/A-pppDriverProfileDelete

This API is used to send a driver profile delete request to the PPPServer. The PPPServer also uses this API for its response.

Method Type	OneShot (asynchronous)				
QoS Level	Default				
Retained	No				
R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					

R	PersID	Enum	-	-	Personality profile being deleted
			PROFILE_1	0x0	
			PROFILE_2	0x1	
			PROFILE_3	0x2	
			PROFILE_4	0x3	
			VEHICLE	0x4	
Response					
R	ResponseCode	Enum	-	-	Response to request
			SUCCESS	0x0	
			FAILED	0x1	

2.8.1.6 Internal CCPU/VIP Interfaces

2.8.1.6.1 MD-REQ-448191/A-PPP_Cmd_Rx_Ready_St

Signal Name	Size (bits)	Detail	Units	Res.	Offset	State Encoded	Min	Max
PPP_Cmd_Rx_Ready_St	1	-	SED	1	0		0 (0x0)	1 (0x1)
		Not Ready to Receive PPP Request				0x0		
		Ready to Receive PPP Request				0x1		

2.8.1.6.2 MD-REQ-448192/A-FeatureCode_St

Signal Name	Size (bits)	Detail	Units	Res.	Offset	State Encoded	Min	Max
FeatureCode_St	16	-	Number	1	0		0 (0x0)	65535 (0xFFFF)

2.8.1.6.3 MD-REQ-448193/A-FeatureValue_St

Signal Name	Size (bits)	Detail	Units	Res.	Offset	State Encoded	Min	Max
FeatureValue_St	16	-	Undefined	1	0		0 (0x0)	65535 (0xFFFF)

2.8.1.7 Auto Save

2.8.1.7.1 MD-REQ-420482/A-setAutoSavePrompt

This API is used to request a prompt to be displayed on the PPPInterfaceClient for the Auto Save feature. The PPPInterfaceClient also uses this API for its response.

Method Type	One-Shot (Synch)				
QoS Level	Default				
Retained	No				
R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					

R/O	Name	Type	Literals	Value	Description
R	PromptControl	Enum	-	-	Used to control the visibility of the prompt
			Close	0x0	
			Display	0x1	
R	PromptType	Enum	-	-	Used to indicate the type of prompt
			Multiple	0x0	
			Seat	0x1	
			Mirror	0x2	
			Pedal	0x3	
			Steering Wheel	0x4	
			HUD	0x5	
			Simple	0x6	
Response					
R	PromptResponse	Enum	-	-	Used to indicate the user or program response to the requested prompt
			None	0x0	
			No Save	0x1	
			Save	0x2	
			Change Profile	0x3	
			Blocked	0x4	
			Timeout	0x5	
			Ignore	0x6	

2.8.1.7.2   MD-REQ-420483/A-autoSaveSettingBroadcast

This API is used to broadcast the user selected Auto Save feature setting on the PPPServer.

Method Type	OnChange				
QoS Level	Default				
Retained	Yes				
R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					
-	-	-	-	-	N/A
Response					
R	AutoSaveSettingStatus	Enum	-	-	Used to indicate the status of the Auto Save user setting
			Off	0x0	
			On	0x1	

2.8.1.7.3   MD-REQ-420587/A-autoSaveFeatureStatusBroadcast

This API is used to broadcast the Auto Save Feature Status on the PPPServer.

Method Type	OnChange				
QoS Level	Default				
Retained	Yes				
R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					
-	-	-	-	-	N/A
Response					

R	AutoSaveFeatureStatus	Enum	-	-	Used to indicate the status of the Auto Save Feature
			Inactive	0x0	
			Disable	0x1	
			Enable	0x2	

2.8.2   PPP-IIR-REQ-425086/A-PPPInterfaceClient_Tx

2.8.2.1   PPP

2.8.2.1.1   MD-REQ-099308/A-InfotainmentRecall_Rq

Message Type: Request

The signal is used by the Enhanced Memory Interface Client to change the active personality profile to the personality profile indicated in the request.

Name	Literals	Value	Description
PersIndex	-	-	Indicates the Personality Profile being requested.
	Null	0x0	
	Pers1	0x1	
	Pers2	0x2	
	Pers3	0x3	
	Pers4	0x4	
	Vehicle	0x5	

2.8.2.1.2   MD-REQ-420762/A-pppFeatureOp

This API is used to the request an operation of a PPP setting (change feature settings, query feature settings, etc.) from a PPPSettingServer. The PPPSettingServer also uses this API for its response.

Method Type	OneShot (asynchronous)				
QoS Level	Default				
Retained	Yes				

R/O	Name		Type	Literals	Value	Description
Request						
R	PersCommand		Enum	-	-	Command being requested
				QUERY_ONE	0x0	
				QUERY_ALL	0x1	
				SET	0x2	
R	PersID		Enum	-	-	Personality profile is being accessed
				PROFILE_1	0x0	
				PROFILE_2	0x1	
				PROFILE_3	0x2	
				PROFILE_4	0x3	
				VEHICLE	0x4	
R	SettingsType		Enum	-	-	Type of setting being accessed
				USER_ PERSONALIZED	0x0	
				REJUVENATE_ RELAX	0x1	
				REJUVENATE_ INVIGORATE	0x2	
				SSW_WORK	0x3	
Rep	FeatureMap	FeatureCode	uint32	-	0x0000 – 0xFFFF	Feature code/number being requested

		FeatureValue	uint32	-	0x0000 – 0xFFFF	Feature value being requested
Response						
R	ResponseCode		Enum	-	-	Response to requested operation
				SUCCESS	0x0	
				FAILED	0x1	
				INVALID	0x2	
R	ParameterCount		uint32	-	0x0000 – 0xFFFF	Parameter Count of the response
Rep	FeatureMap	FeatureCode	uint32	-	0x0000 – 0xFFFF	Feature code/number being requested
		FeatureValue	uint32	-	0x0000 – 0xFFFF	Feature value being requested

2.8.2.1.3 MD-REQ-425080/B-pppStoreProfileData

This API is used to the request the Pers. Service to create/store a new profile. The Pers. Service also uses this API for its response.

Method Type	OneShot (asynchronous)
QoS Level	Default
Retained	Yes

R/O	Name	Type	Literals		Value	Description
Request						
R	ProfileType	Enum	-		-	Driver or Passenger Profile being accessed
			Driver		0x0	
			Passenger		0x1	
R	PersID	Enum	-		-	Personality profile is being accessed
			PROFILE_1		0x0	
			PROFILE_2		0x1	
			PROFILE_3		0x2	
			PROFILE_4		0x3	
			VEHICLE		0x4	
Response						
R	ResponseCode	Enum	-		-	Response to requested operation
			SUCCESS		0x0	
			FAILED		0x1	
			INVALID		0x2	
R	ErrorCode	Enum	-		-	Error Code to requested operation
			NOERROR		0x0	
			INVALID_INDEX		0x1	
			INCOMPATIBLE_API_VERSION		0x2	
			COMMAND_NOT_SUPPORTED		0x3	

		COMMAND_NOT_PERMITTED	0x4	
		COMMAND_TIMED_OUT	0x5	
		COMMAND_QUEUE_FULL	0x6	
		DENIED_RATE_LIMIT_EXCEEDED	0x7	
		PROFILE_NAME_ALREADY_EXISTS	0x8	
		UNKNOWN_ERROR	0x9	

2.8.2.1.4   MD-REQ-420763/A-pppSettingsChangeBroadcast

This API is used to notify the PPPServer of a settings change in the PPPInterfaceClient.

Method Type	Fire&Forget				
QoS Level	Default				
Retained	Yes				

R/O	Name	Type	Literals	Value	Description
Request					
-	-	-	-	-	N/A
Response					
R	SettingsChange	Enum	-	-	Profile updated indicator
			NULL	0x0	
			PROFILE_UPDATED	0x1	

2.8.2.1.5   MD-REQ-442699/B-pppUpdateWizardSettings

This API is used to send PPP settings to the PPPInterfaceClient for use in the Setup Wizard. The PPPInterfaceClient also uses this API for its response.

Method Type	OneShot (asynchronous)				
QoS Level	Default				
Retained	Yes				

R/O	Name		Type	Literals	Value	Description
Request						
R	ProfileImported		Bool	-	0/1	0 - No profile imported 1 - Profile imported
Rep	FeatureMap	FeatureCode	int16	-	0x0000 – 0xFFFF	Feature code/number being requested
		FeatureValue	uint16	-	0x0000 – 0xFFFF	Feature value being requested
			int16	-	-	
			bytes	-	0 - 64k	
			float	-	-	
			string	-	0 - 200 chars	
			double	-	-	
Response						
R	ResponseCode		Enum	-	-	Response to requested operation
				SUCCESS	0x0	
				FAILED	0x1	

2.8.2.1.6 MD-REQ-442701/B-pppAccountID

This API is used to send AccountID information to the PPPServer. The PPPServer also uses this API for its response.

Method Type	Fire&Forget)
QoS Level	Default
Retained	No

R/O	Name	Type	Literals	Value	Description
Request					
R	accountID	string	-	40 chars	AccountID per the authenticated FordPass credentials (up to 40 chars)
R	newProfile	Bool	-	0/1	0 – Not a new profile being created 1 – New profile being created
R	PersID	Enum	-	-	Personality profile being associated
			PROFILE_1	0x0	
			PROFILE_2	0x1	
			PROFILE_3	0x2	
			PROFILE_4	0x3	
			VEHICLE	0x4	
Response					
R	ResponseCode	Enum	-	-	Response to request
			Ok	0x0	
			Already In Use	0x1	
R	PersID	Enum	-	-	Personality profile already associated to Account ID. N/A if ResponseCode = Ok
			PROFILE_1	0x0	
			PROFILE_2	0x1	
			PROFILE_3	0x2	
			PROFILE_4	0x3	

2.8.2.1.7 MD-REQ-447757/A-pppProfileLockStatus

This API is used to broadcast the Profile Lock status of each personal portable profile.

Method Type	OnChange
QoS Level	Default
Retained	Yes

R/O	Name	Type	Literals	Value	Description
Request					
-	-	-	-	-	N/A
Response					
R	Profile1	Enum	-	-	Profile1 Profile Lock status
			Disabled	0x0	
			Enabled_Locked	0x1	
			Enabled_Unlocked	0x2	
R	Profile2	Enum	-	-	Profile2 Profile Lock status
			Disabled	0x0	
			Enabled_Locked	0x1	

			Enabled_Unlocked	0x2	
R	Profile3	Enum	-	-	Profile3 Profile Lock status
			Disabled	0x0	
			Enabled_Locked	0x1	
			Enabled_Unlocked	0x2	
R	Profile4	Enum	-	-	Profile4 Profile Lock status
			Disabled	0x0	
			Enabled_Locked	0x1	
			Enabled_Unlocked	0x2	

2.8.2.1.8 MD-REQ-447805/A-pppDisassociateFordPass

This API is used to send a request to disassociate a FordPass Account from a personal profile.

Method Type	Fire&Forget				
QoS Level	Default				
Retained	No				

R/O	Name	Type	Literals	Value	Description
Request					
R	PersID	Enum	-	-	Personality profile being requested
			PROFILE_1	0x0	
			PROFILE_2	0x1	
			PROFILE_3	0x2	
			PROFILE_4	0x3	
Response					
-	-	-	-	-	N/A

2.8.2.1.9 MD-REQ-448188/A-pppImportRetry

This API is used to request an import retry of the PPPServer.

Method Type	Fire&Forget				
QoS Level	Default				
Retained	No				

R/O	Name	Type	Literals	Value	Description
Request					
R	Request	Enum	-	-	Retry request
			No Retry	0x0	
			Retry	0x1	
Response					
-	-	-	-	-	N/A

2.8.2.1.10 MD-REQ-466887/A-pppDriverProfileDelete

This API is used to send a driver profile delete request to the PPPServer. The PPPServer also uses this API for its response.

Method Type	OneShot (asynchronous)
QoS Level	Default
Retained	No

R/O	Name	Type	Literals	Value	Description
Request					
R	PersID	Enum	-	-	Personality profile being deleted
			PROFILE_1	0x0	
			PROFILE_2	0x1	
			PROFILE_3	0x2	
			PROFILE_4	0x3	
			VEHICLE	0x4	
Response					
R	ResponseCode	Enum	-	-	Response to request
			SUCCESS	0x0	
			FAILED	0x1	

2.8.2.2 Internal CCPU/VIP Interfaces

2.8.2.2.1 MD-REQ-448194/A-PersCommand_Rq

Signal Name	Size (bits)	Detail	Units	Res.	Offset	State Encoded	Min	Max
PersCommand_Rq	3		SED	1	0		0 (0x0)	7 (0x7)
		NULL				0x0		
		QUERY				0x1		
		SET				0x2		
		COPY				0x3		
		Not Used				0x4-0x7		

2.8.2.2.2 MD-REQ-448195/A-FeatureCode_Rq

Signal Name	Size (bits)	Detail	Units	Res.	Offset	State Encoded	Min	Max
FeatureCode_Rq	16	-	Undefined	1	0		0 (0x0)	65535 (0xFFFF)

2.8.2.2.3 MD-REQ-448196/A-FeatureValue_Rq

Signal Name	Size (bits)	Detail	Units	Res.	Offset	State Encoded	Min	Max
FeatureValue_Rq	16	-	Undefined	1	0		0 (0x0)	65535 (0xFFFF)

2.8.2.2.4 MD-REQ-448197/A-PersIndex_Rq

Signal Name	Size (bits)	Detail	Units	Res.	Offset	State Encoded	Min	Max
PersIndex_Rq	3		SED	1	0		0 (0x0)	7 (0x7)
		PERS_1				0x0		
		PERS_2				0x1		
		PERS_3				0x2		
		PERS_4				0x3		

	Vehicle				0x4		
	Unused				0x5		
	Unused				0x6		
	Unused				0x7		

2.8.2.3 Auto Save

2.8.2.3.1 MD-REQ-420482/A-setAutoSavePrompt

This API is used to request a prompt to be displayed on the PPPInterfaceClient for the Auto Save feature. The PPPInterfaceClient also uses this API for its response.

	Method Type	One-Shot (Synch)				
	QoS Level	Default				
	Retained	No				

R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					
R	PromptControl	Enum	-	-	Used to control the visibility of the prompt
			Close	0x0	
			Display	0x1	
R	PromptType	Enum	-	-	Used to indicate the type of prompt
			Multiple	0x0	
			Seat	0x1	
			Mirror	0x2	
			Pedal	0x3	
			Steering Wheel	0x4	
			HUD	0x5	
			Simple	0x6	
Response					
R	PromptResponse	Enum	-	-	Used to indicate the user or program response to the requested prompt
			None	0x0	
			No Save	0x1	
			Save	0x2	
			Change Profile	0x3	
			Blocked	0x4	
			Timeout	0x5	
			Ignore	0x6	

2.8.2.3.2 MD-REQ-420588/A-setAutoSaveSetting

This API is used to change the Auto Save user setting on the PPPServer.

	Method Type	Fire & Forget				
	QoS Level	Default				
	Retained	Yes				

R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					
R	AutoSaveSettingRequest	Enum	-	-	Used to change the Auto Save user setting

			Off	0x0	
			On	0x1	
Response					
-	-	-	-	-	N/A

2.8.2.3.3   MD-REQ-420589/A-getAutoSaveSetting

This API is used to request transmission of the Auto Save user setting (via autoSaveSettingBroadcast) from the PPPServer.

Method Type	Fire & Forget				
QoS Level	Default				
Retained	No				
R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					
-	-	-	-	-	N/A
Response					
-	-	-	-	-	N/A

2.8.2.3.4   MD-REQ-420590/A-getAutoSaveFeatureStatus

This API is used to request transmission of the Auto Save Feature Status (via autoSaveFeatureStatusBroadcast) from the PPPServer.

Method Type	Fire & Forget				
QoS Level	Default				
Retained	No				
R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					
-	-	-	-	-	N/A
Response					
-	-	-	-	-	N/A

3   General Requirements

3.1   PPP-REQ-406669/A-Profile Attribute Specification Reference

The list of personalized settings that are to be supported by PPP shall be defined in the Profile Attribute Specification.

3.2   PPP-REQ-406671/B-Powermode Conditions

Personal Portable Profiles shall follow the powermode conditions of Enhanced Memory (see REQ-198389 & REQ-099699). However, profile synchronization (FUN-REQ-406666-Setting Synchronization) shall be allowed as long as Powerpack_St = (0x3) PwPckOn_TqAvailable.

3.3   PPP-REQ-408149/A-PPPInterfaceClient Feature Configuration

The PPPInterfaceClient shall have a configurable parameter/DID to allow the feature to be enabled/disabled.
- When the parameter indicates that PPP is Enabled, all the functionality and signals defined in this SPSS shall be supported.
- When the parameter indicates that PPP is Disabled, none of the functionality defined in this SPSS shall be supported.
    - o   The default value for this parameter shall be Disabled.

4 Functional Definition

4.1 PPP-FUN-REQ-425087/A-Profile Management

4.1.1 Use Cases

4.1.1.1 PPP-UC-REQ-406750/A-Profile Creation via PPPOffBoardClient

Actors	Portable Profile User(s)
Pre-conditions	User does not have an OffBoard Profile associated with their FordPass Account User has a FordPass Account User has a means to access the FordPass Account (FordPass App or Owners site)
Scenario Description	User opens PPPOffBoardClient interface and selects to create a profile. The PPPOffBoardClient interface displays profile settings and preferences for the user to configure. Once completed, the OffBoard Profile is stored by the PPPOffBoardClient. OffBoard Profile is created and associated with FordPass Account.
Post-conditions	OffBoard Profile is associated with the user's FordPass Account. OffBoard Profile is created and stored.
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.1.1.2 PPP-UC-REQ-406751/A-Edit Profile via PPPOffBoardClient

Actors	Portable Profile User(s)
Pre-conditions	OffBoard Profile previously created for FordPass Account. User logged into FordPass Account.
Scenario Description	User selects to edit their OffBoard Profile. PPPOffBoardClient interface displays OffBoard Profile settings/preferences that are able to be edited via PPPOffBoardClient interface. User makes changes and saves OffBoard Profile
Post-conditions	All OffBoard Profile changes are saved and stored in the PPPOffBoardClient.
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.1.1.3 PPP-UC-REQ-406753/A-Remove Request via PPPOffBoardClient

Actors	Portable Profile User(s)
Pre-conditions	Receiving vehicle has cellular connection to PPPOffBoardClient User has FordPass Account User has an OffBoard Profile associated to their FordPass Account Personal Profile associated to FordPass Account is saved to specified vehicle
Scenario Description	User navigates to OffBoard Profile menu in FordPass or Owners Site. User selects to remove their Personal Profile from a specific vehicle. Request is sent from the PPPOffBoardClient to the specified vehicle. PPPServer executes the remove operation and alerts the PPPOffBoardClient. OffBoard Profile disassociates from the specified vehicle.

Post-conditions	OffBoard Profile is disassociated from specified vehicle. Associated Personal Profile is removed from specified vehicle.
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.1.1.4 PPP-UC-REQ-406749/B-In-Vehicle Personal Profile Deleted, Association Removed

Actors	Portable Profile User(s)
Pre-conditions	Vehicle has cloud connectivity. Personal Profile associated to FordPass Account.
Scenario Description	User deletes the associated Personal Profile from the vehicle. PPPServer sends a request to the PPPOffBoardClient to disassociate the OffBoard Profile.
Post-conditions	OffBoard Profile disassociated from specified vehicle. Personal Profile deleted from vehicle.
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.1.2 Requirements

4.1.2.1 PPP-REQ-442720/A-Central Portable Profile Creation from Off Board Profile – Setup Wizard Settings

After receiving pppAccountID(ResponseCode = Ok) from the PPPServer, the PPPInterfaceClient shall wait for pppUpdateWizardSettings to indicate whether profile data was imported or not.

- If the PPPInterfaceClient was able to receive and read the data in FeatureMap, the PPPInterfaceClient shall send pppUpdateWizardSettings(ResponseCode = Success).
- If it could not, the PPPInterfaceClient shall send pppUpdateWizardSettings(ResponseCode = Failed).

If pppUpdateWizardSettings(ProfileImported = 0), the PPPInterfaceClient shall continue profile creation, requiring the user to enter all necessary fields.

If pppUpdateWizardSettings(ProfileImported = 1), the PPPInterfaceClient shall continue profile creation, prepopulating the relevant fields (if applicable) based on the received FeatureNumbers and FeatureValues in pppUpdateWizardSettings(FeatureMap).

The PPPInterfaceClient offers a 'Recency Card/IOD' that also uses this information. If profile creation is interrupted and does not fully complete, and the recency card issues the user a reminder, it shall use the received FeatureNumbers and FeatureValues provided in pppUpdateWizardSettings(FeatureMap) as necessary.

4.1.2.2 PPP-REQ-442721/A-Central Portable Profile Creation from Off Board Profile – Ready to Send Settings

After sending pppUpdateWizardSettings(ResponseCode) to the PPPServer per REQ-442720, and after T_RecallDelay expiring (see ENMEM-REQ-198918) the PPPInterfaceClient shall notify the PPPServer via pppStartImport that it may begin sending its imported settings to the PPPSettingServers. The values shall be set accordingly:
- PersID = the PersIndex/PersID of the respective Central Portable Profile
- StartImport = 1

4.1.2.3 PPP-REQ-442722/A-Central Portable Profile Creation from Off Board Profile – Recall Request

The PPPInterfaceClient shall wait for pppImportStatusBroadcast(Status = Complete - Success) before issuing the recall request per ENMEM-REQ-198918. If the response is not received within 60 seconds, the PPPInterfaceClient shall issue the recall request.

4.1.2.4 PPP-REQ-434459/B-Central Portable Profile Creation – Store Request after Import

If pppUpdateWizardSettings indicated a profile was imported in REQ-442720, upon receiving
pppImportStatusBroadcast(Status = Complete - Success) the PPPInterfaceClient shall request the Pers. Service to gather
and store all profile settings/data via pppStoreProfileData(ProfileType, PersID), where:
- ProfileType = Driver
- PersID = the PersIndex used to create the profile (either assigned by default, or selected by the user)

4.1.2.5 PPP-REQ-470316/A-Central Portable Profile Creation - Store Request when no Import

If pppUpdateWizardSettings indicated a profile was not imported in REQ-442720, and per 1 & 2 below, the
PPPInterfaceClient shall request the Pers. Service to gather and store all profile settings/data via
pppStoreProfileData(ProfileType, PersID), where:
- ProfileType = Driver
- PersID = the PersIndex used to create the profile (either assigned by default, or selected by the user)

1. If the user did not change their Memory Seat Button selection, this request shall be sent after the final Seat Configuration
   Screen, just before the Device Association screen is shown.

2. If the user did change their Memory Seat Button selection, this request shall be sent after the new Copy operation is sent
   and after T_RecallDelay expires (see ENMEM-REQ-198918).

Note: Irrespective of profile import or not, the pppStoreProfileData must be requested by the PPPInterfaceClient, but the time
at which the request is sent differs based on the varying indicators. When no import is made, this request must be sent after
all user entries are made (name, avatar, adjustment of seats, etc.). When a memory seat button change occurs, because of
the resulting actions, this request must be sent only after all settings have been copied to the new PersID (per the Copy
function of Enhanced Memory).

4.1.2.6 PPP-REQ-434461/B-Central Portable Profile Creation – Failed Response

If the PPPInterfaceClient receives pppStoreProfileData(ResponseCode = Failed or Invalid, ErrorCode), it shall perform the
following:

- INVALID_INDEX: Request user to select seat button again if this cannot be fixed internally
- INCOMPATIBLE_API: Display an error notification requiring service
- COMMAND_NOT_SUPPORTED: Display an error notification requiring service
- COMMAND_NOT_PERMITTED: Nothing - future use
- COMMAND_TIMEOUT: Display an error notification with option to Retry or Cancel. Cancel shall leave Setup Wizard
- COMMAND_QUEUE_FULL: Display an error notification to try again later with option to Retry or Cancel
- DENIED_RATE_LIMIT_EXCEEDED: Display an error notification to try again later with option to Retry or Cancel
- UNKOWN_ERROR: Display an error notification to try again later with option to Retry or Cancel

TBD - some of these should be defined by the personalization service, especially the ones where we recommend service.

4.1.2.7 PPP-REQ-441592/A-No Connectivity Notification

The PPPInterfaceClient shall display a notification indicating a Loss of Connectivity, when connectivity is lost and any process
that requires connectivity has been requested (Profile Creation, FordPass Association, Synchronization). Connectivity shall
be obtained from FCI and shall be considered lost when:

SdnConnectionStatusBroadcast(
- InterfaceType = Connection_TCU_Cell
- SDNConnStatus= SDN_Disconnected)

Note: Loss of connectivity for this feature is in regards to the capability to send/receive FTCP, which is why only the
'Connection_TCU_Cell' interface type is considered.

4.1.2.8 PPP-REQ-448189/A-Import Status Notification

Upon receiving pppImportStatusBroadcast() from the PPPServer, the PPPInterfaceClient shall display a notification to the
user for the below values:

- None = no notification shall be displayed
- In Progress = an 'In Progress' notification shall be displayed
- Complete – Success = a 'Success' notification shall be displayed
- Complete – Partial = a 'Failed' notification shall be displayed with the option to Retry or Cancel
- Complete – Fail = a 'Failed' notification shall be displayed with the option to Retry or Cancel

The 'Failed' notification shall only be shown for a maximum of 3 consecutive times, of which the 3rd notification shall not offer an option to Retry, only Close.

Note: This same notification shall be shown whether being received due to a Synchronization event, Restore event or Profile Creation.

4.1.2.9 PPP-REQ-448190/A-Import Status Notification User Response

After displaying the import status notification to the user, the PPPInterfaceClient shall send pppImportRetry to the PPPServer based on the user selection. If the user selected:
- Retry – the PPPInterfaceClient shall send pppImportRetry(Request = Retry)
- Close – the PPPInterfaceClient shall send pppImportRetry(Request = No Retry)

If the notification is dismissed without any user input, the PPPInterfaceClient shall send pppImportRetry(Request = No Retry).

4.1.2.10 PPP-REQ-470317/A-Delete Driver Profile - Request

When a Driver Profile is requested to be deleted by the user, the PPPInterfaceClient shall send pppDriverProfileDelete(PersID) to the PPPServer, where PersID is set to the profile/PersIndex being deleted.

4.1.2.11 PPP-REQ-470318/A-Delete Driver Profile - Response/Clear Data

When the PPPServer responds to the delete request via pppDriverProfileDelete(ResponseCode), the PPPInterfaceClient shall:
- If ResponseCode = Success, delete the respective Driver Profile data and display a Success notification
- If ResponseCode = Failed, keep/show the respective Driver Profile data and display a Failed notification with the option to Retry

4.1.3 White Box View

4.1.3.1 Activity Diagrams

4.1.3.2 Sequence Diagrams

4.2 PPP-FUN-REQ-448198/A-VIP Settings Management

4.2.1 Use Cases

4.2.1.1 *PPP-UC-REQ-448199/B-PPPInterfaceClient receives a Query All from PPPServer*

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Powermode conditions are met Enhanced Memory is supported Personal Portable Profiles is supported VIP Settings not yet cached
Scenario Description	The PPPInterfaceClient receives a QueryAll from the PPPServer
Post-conditions	The PPPInterfaceClient sends internal interface to VIP for the VIP personalized settings, gathers responses, and responds to the PPPServer.
List of Exception Use Cases	
Interfaces	SoA

4.2.1.2 *PPP-UC-REQ-448200/B-PPPInterfaceClient receives a Query from PPPServer for a VIP setting*

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Powermode conditions are met Enhanced Memory is supported Personal Portable Profiles is supported VIP Settings not yet cached
Scenario Description	The PPPInterfaceClient receives a Query from the PPPServer for a setting that is personalized by the VIP
Post-conditions	The PPPInterfaceClient sends internal interface to VIP for the requested settings, gathers the response, and responds to the PPPServer.
List of Exception Use Cases	REQ-448201-PPPInterfaceClient receives a Query from PPPServer for a VIP setting not personalized by VIP
Interfaces	SoA

4.2.1.3 *PPP-UC-REQ-448201/B-PPPInterfaceClient receives a Query from PPPServer for a VIP setting not personalized by VIP*

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Powermode conditions are met Enhanced Memory is supported Personal Portable Profiles is supported VIP Settings not yet cached
Scenario Description	The PPPInterfaceClient receives a Query from the PPPServer for the VIP for a setting that is not personalized by the VIP
Post-conditions	The PPPInterfaceClient sends internal interface to VIP for the requested settings, gathers the response, and responds to the PPPServer.

List of Exception Use Cases	
Interfaces	SoA

4.2.1.4 PPP-UC-REQ-471225/A-PPPInterfaceClient receives a Query from PPPServer (VIP Settings Cached)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Powermode conditions are met Enhanced Memory is supported Personal Portable Profiles is supported VIP Settings are cached
Scenario Description	The PPPInterfaceClient receives a QueryAll from the PPPServer
Post-conditions	The PPPInterfaceClient sends response to the PPPServer based on internally cached VIP Settings.
List of Exception Use Cases	
Interfaces	SoA

4.2.1.5 PPP-UC-REQ-448202/A-PPPInterfaceClient receives a Set from the PPPServer for a VIP setting

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Powermode conditions are met Enhanced Memory is supported Personal Portable Profiles is supported
Scenario Description	The PPPInterfaceClient receives a Set request for a VIP personalized setting
Post-conditions	The PPPInterfaceClient sends internal interface to VIP for the requested setting, gathers the response, and responds to the PPPServer.
List of Exception Use Cases	REQ-488203- PPPInterfaceClient receives a Set from the PPPServer for a VIP setting not personalized by VIP
Interfaces	SoA

4.2.1.6 PPP-UC-REQ-448203/A-PPPInterfaceClient receives a Set from the PPPServer for a VIP setting not personalized by VIP

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Powermode conditions are met Enhanced Memory is supported Personal Portable Profiles is supported
Scenario Description	The PPPInterfaceClient receives a Set request from the PPPServer for the VIP for a setting that is not personalized by the VIP
Post-conditions	The PPPInterfaceClient sends internal interface to VIP for the requested setting, gathers the response, and responds to the PPPServer.

List of Exception Use Cases	
Interfaces	SoA

4.2.1.7 PPP-UC-REQ-448204/A-VIP notifies PPPInterfaceClient of a settings change

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Powermode conditions are met Enhanced Memory is supported Personal Portable Profiles is supported
Scenario Description	A PPP setting on the VIP is updated (via some means other than PPP). The VIP notifies the PPPInterfaceClient that a setting change has occurred.
Post-conditions	The PPPInterfaceClient notifies the PPPServer that a setting change has occurred
List of Exception Use Cases	
Interfaces	SoA

4.2.2 Requirements

4.2.2.1 PPP-REQ-448205/A-Settings personalized by PPPInterfaceClient

For the expected behavior and requirements applicable to the PPPInterfaceClient for settings that it is responsible for personalizing, please see the PPPSettingServer SPSS.

4.2.2.2 PPP-REQ-448206/A-Settings personalized by VIP

For all settings personalized by the VIP, the PPPInterfaceClient (CCPU in this case) shall be responsible for gatewaying the requested commands from the PPPServer. The PPPInterfaceClient shall assume that any FeatureCode it receives via pppFeatureOp that is not responsible for personalizing, must be personalized by the VIP, and shall therefore be gatewayed to it.

4.2.2.3 PPP-REQ-448207/A-VIP Ready State

The PPPInterfaceClient monitor PPP_Cmd_Rx_Ready_St from the VIP to understand its ready state.
- If PPP_Cmd_Rx_Ready_St = 0x1, the PPPInterfaceClient shall forward incoming requests to the VIP
- If PPP_Cmd_Rx_Ready_St = 0x0, the PPPInterfaceClient shall not forward incoming requests to the VIP, and shall instead send a Failed pppFeatureOp to the PPPServer

4.2.2.4 PPP-REQ-471226/A-Cache VIP Settings

At startup and when VIP is ready per REQ-448207, the PPPInterfaceClient shall perform a Query All as per REQ-448208 to obtain and cache all VIP personalized settings. The PPPInterfaceClient shall cache these settings for the life of the ignition cycle.

When VIP personalized settings are updated as per REQ-448214, the PPPInterfaceClient shall update its cache accordingly.

When a Set operation for a VIP personalized setting is performed, and the VIP sends its response as per REQ-448213, the PPPInterfaceClient shall update its cache accordingly.

4.2.2.5 PPP-REQ-448208/B-Forwarding a Query All Request

Upon receiving pppFeatureOp(PersCommand=Query_All, ParameterCount, PersID, SettingsType = Personalized) which indicates a 'Query All' operation, and if the PPPInterfaceClient doesn't have its cache populated as per REQ-471226, the PPPInterfaceClient shall send the following to the VIP:
- PersCommand_Rq = Query

- FeatureCode_Rq = 0xFFFF
- PersIndex_Rq = PersID indicated in pppFeatureOp

4.2.2.6   PPP-REQ-448209/B-Forwarding a Query All Response

After forwarding the QueryAll (if applicable) as per REQ-448208, the PPPInterfaceClient shall monitor FeatureCode_St and FeatureValue_St from the VIP for all responding feature codes, and include the received values along with its own in the pppFeatureOp response to the PPPServer (per REQ-434450 of the PPPSettingServer SPSS).

If the PPPInterfaceClient had its cache populated at the time of the request, the PPPInterfaceClient shall instead respond with values from cache.

4.2.2.7   PPP-REQ-448210/B-Forwarding a Query Request

Upon receiving pppFeatureOp(PersCommand=Query, ParameterCount, PersID, SettingsType = Personalized, FeatureMap) which indicates a 'Query' operation, and if the PPPInterfaceClient doesn't have cache populated as per REQ-471226, the PPPInterfaceClient shall send the following to the VIP:
- PersCommand_Rq = Query
- FeatureCode_Rq = FeatureNumber indicated in the FeatureMap of pppFeatureOp
- PersIndex_Rq = PersID indicated in pppFeatureOp

4.2.2.8   PPP-REQ-448211/B-Forwarding a Query Response

After forwarding the Query (if applicable) as per REQ-448210, the PPPInterfaceClient shall monitor FeatureCode_St and FeatureValue_St from the VIP for the responding feature code and value, and send the received value in the pppFeatureOp response to the PPPServer (per REQ-434454 of the PPPSettingServer SPSS).

If FeatureCode_St = 0xFFFF is received, this means the requested FeatureCode_St is not a VIP personalized setting. In this case, the PPPInterfaceClient shall send an Invalid pppFeatureOp response to the PPPServer (per REQ-434456 of the PPPSettingServer SPSS).

If no response is received after Xs, this means the VIP has encountered an error and failed to perform the Query. In this case, the PPPInterfaceClient shall send a Failed pppFeatureOp response to the PPPServer (per REQ-434455 of the PPPSettingServer SPSS).

If the PPPInterfaceClient had its cache populated at the time of the request, the PPPInterfaceClient shall instead respond with values from cache.

4.2.2.9   PPP-REQ-448212/A-Forwarding a Set Request

Upon receiving pppFeatureOp(PersCommand=Set, ParameterCount, PersID, SettingsType = Personalized, FeatureMap) which indicates a 'Set' operation, the PPPInterfaceClient shall send the following to the VIP:
- PersCommand_Rq = Set
- FeatureCode_Rq = FeatureNumber indicated in the FeatureMap of pppFeatureOp
- FeatureValue_Rq = FeatureValue indicated in the FeatureMap of pppFeatureOp
- PersIndex_Rq = PersID indicated in pppFeatureOp

4.2.2.10   PPP-REQ-448213/A-Forwarding a Set Response

After forwarding the Set as per REQ-488212, the PPPInterfaceClient shall monitor FeatureCode_St and FeatureValue_St from the VIP for the responding feature code and value, and send the received value in the pppFeatureOp response to the PPPServer (per REQ-434454 of the PPPSettingServer SPSS).

If FeatureCode_St = 0xFFFF is received, this means the requested FeatureCode_St is not a VIP personalized setting. In this case, the PPPInterfaceClient shall send an Invalid pppFeatureOp response to the PPPServer (per REQ-435388 of the PPPSettingServer SPSS).

If no response is received after Xs, this means the VIP has encountered an error and failed to perform the Set. In this case, the PPPInterfaceClient shall send a Failed pppFeatureOp response to the PPPServer (per REQ-435387 of the PPPSettingServer SPSS).

4.2.2.11 PPP-REQ-448214/B-Forwarding a Settings Update Notification

Upon receiving FeatureCode_St and FeatureValue_St from the VIP, when not preceded by a PersCommand_Rq, the PPPInterfaceClient shall send pppSettingsChangeBroadcast to the PPPServer indicating a settings update (per REQ-434464 of the PPPSettingServer SPSS).

4.2.3 White Box View

4.2.3.1 Activity Diagrams

4.2.3.2 Sequence Diagrams

4.3   PPP-FUN-REQ-425088/A-Profile Lock

4.3.1   Use Cases

4.3.1.1   *PPP-UC-REQ-406787/A-User enables Profile Lock*

Actors	Portable Profile User(s)
Pre-conditions	Profile Lock is not enabled for the active profile
Scenario Description	User navigates to and selects Profile Lock User is presented with and enters Authentication credentials (PIN, Pattern, etc.)
Post-conditions	Profile Lock is enabled and Central Portable Profile is protected
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.3.1.2   *PPP-UC-REQ-406788/B-User disables Profile Lock*

Actors	Portable Profile User(s)
Pre-conditions	Profile Lock is enabled for the active profile Profile is currently unlocked
Scenario Description	User navigates to the Profile Lock setting and disables Profile Lock User is presented with and enters Authentication credentials (PIN, Pattern, etc.)
Post-conditions	Profile Lock is disabled and Central Portable Profile is not protected Previously entered/stored authentication credentials are deleted
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.3.1.3   *PPP-UC-REQ-406747/A-Settings Changed while Profile Locked*

Actors	Portable Profile User(s)
Pre-conditions	Profile Lock is enabled for the active profile Profile is currently locked
Scenario Description	A change is made to the active Profile. The change is active in the vehicle, but is not saved to the Central Portable Profile or exported to the PPPOffBoardClient
Post-conditions	Changed settings are not saved or synchronized with the PPPOffBoardClient
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.3.2   Requirements

4.3.2.1   PPP-REQ-406674/A-Profile Lock Enable/Disable Setting

The PPPInterfaceClient shall allow the customer to enable or disable Profile Lock. Profile Lock shall leverage the native Android Profile/Screen Lock capability, offered per profile.

4.3.2.2   PPP-REQ-406676/A-Primary Authentication Setup

Upon enabling Profile Lock, the PPPInterfaceClient shall prompt the user to enter their Primary Authentication credentials. The methods offered shall be based on Android capability (PIN, Password, Pattern, etc.). The PPPInterfaceClient shall require this authentication be performed for each Personal Profile for which a Profile Lock has been enabled.

4.3.2.3   PPP-REQ-406681/B-Primary Authentication Retry Strategy

The PPPInterfaceClient shall allow a max of 5 attempts per ignition cycle to authenticate an active Personal Profile via Primary Authentication. If the authentication fails after all attempts, an error notification shall be displayed to the user including a time delay, and all Profile Lock impacted functions shall remain disabled. The retry strategy shall follow the Android implementation of Screen Lock.

4.3.2.4   PPP-REQ-447777/A-Profile Lock Status Broadcast

The PPPInterfaceClient shall broadcast the Profile Lock status for each Portable Profile via pppProfileLockStatus. The status shall be populated as such:

- Disabled = If Profile Lock has not been enabled for the profile
- Enabled_Locked = If Profile Lock has been enabled for the profile, and is locked
- Enabled_Unlocked = If Profile Lock has been enabled for the profile, and is unlocked

4.3.3   White Box View

4.3.3.1   Activity Diagrams

4.3.3.2   Sequence Diagrams

4.4 PPP-FUN-REQ-425090/A-FordPass Association/Disassociation

4.4.1 Use Cases

4.4.1.1 *PPP-UC-REQ-406740/B-Associate Profile with FordPass Account During Creation*

Actors	Portable Profile User(s)
Pre-conditions	OffBoard Profile exists for FordPass Account User has a valid FordPass account Vehicle has cloud connectivity
Scenario Description	User navigates to vehicle Personal Profile menu on PPPInterfaceClient and creates a Personal Profile. User enters FordPass Account credentials when prompted, credentials are authenticated. PPPServer imports OffBoard Profile from PPPOffBoardClient and creates Central Portable Profile while user finishes profile creation. Preferences are applied to the newly created Personal Profile.
Post-conditions	OffBoard Profile is applied to Central Portable Profile and in-vehicle Personal Profile. FordPass account associated to vehicle and vehicle Personal Profile. Optionally, Positive ID methods configured for Personal Profile.
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.4.1.2 *PPP-UC-REQ-406741/A-Associate Profile with FordPass Account After Creation*

Actors	Portable Profile User(s)
Pre-conditions	Personal Profile created User has valid FordPass account OffBoard Profile exists for FordPass Account Vehicle has cloud connectivity
Scenario Description	User enters vehicle profile menu on PPPInterfaceClient and selects target profile. User selects to associate Personal Profile to FordPass Account. User enters credentials and associates their Personal Profile to their FordPass Account. The OffBoard Profile is imported to the PPPServer and applied to the Central Portable Profile and the in-vehicle Personal Profile
Post-conditions	OffBoard Profile is imported and applied to the in-vehicle Personal Profile. In-vehicle Personal Profile is associated to the users FordPass account.
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.4.1.3 *PPP-UC-REQ-406742/A-Associate Profile with FordPass Account – No OffBoard Profile*

Actors	Portable Profile User(s)
Pre-conditions	OffBoard Profile does not exist for FordPass Account User has a valid FordPass Account Vehicle has cloud connectivity

Scenario Description	User navigates to vehicle Personal Profile menu on PPPInterfaceClient and creates a Personal Profile (or edits existing profile). User enters FordPass Account credentials when prompted, credentials are authenticated. Vehicle profile settings are collected in PPPServer and exported to PPPOffBoardClient The exported profile settings create an OffBoard Profile associated to the FordPass Account.
Post-conditions	OffBoard Profile is created and contains settings exported from the Central Portable Profile.
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.4.1.4 PPP-UC-REQ-406743/A-Associate Profile with FordPass Account – Already Associated

Actors	Portable Profile User(s)
Pre-conditions	User has a valid FordPass account User's FordPass Account is already associated to another in-vehicle Personal Profile. Vehicle has cloud connectivity.
Scenario Description	User attempts to associate a FordPass Account to a different Personal Profile. PPPInterfaceClient displays notification that the account is already associated to another Personal Profile. PPPInterfaceClient provides option for user to recall the associated Personal Profile or to cancel the operation.
Post-conditions	User notified that account is already associated PPPInterfaceClient displays option to recall associated account or cancel operation.
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.4.1.5 PPP-UC-REQ-406744/A-Associate Profile with FordPass Account – Invalid Credentials

Actors	Portable Profile User(s)
Pre-conditions	User has attempted to enter credentials less than 5 times. Vehicle has cloud connectivity
Scenario Description	User enters invalid FordPass Account credentials when attempting to associate account with Personal Profile. FordPass Account credentials are found to be invalid and the PPPInterfaceClient allows the user to re-submit their account credentials.
Post-conditions	PPPInterfaceClient prompts user to re-submit account credentials
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.4.1.6 PPP-UC-REQ-406745/A-Disassociate Profile with FordPass Account

Actors	Portable Profile User(s)
Pre-conditions	User is positively identified, or Positive ID is disabled. Personal Profile is associated to a FordPass account
Scenario Description	User navigates to their associated Personal Profile and selects to disassociate their FordPass Account

Post-conditions	Personal Profile is Disassociated Personal Profile is no longer associated to their FordPass Account.
List of Exception Use Cases	
Interfaces	HMI, CAN, SoA, FTCP

4.4.2   Requirements

4.4.2.1   *PPP-REQ-406699/A-FordPass Association*

The PPPInterfaceClient shall prompt the user to associate a FordPass Account during Enhanced Memory Profile Creation. This shall be an optional step, that can be skipped/dismissed. The PPPInterfaceClient shall also allow a user to associate a FordPass Account after profile creation, via the Edit Menu.

4.4.2.2   *PPP-REQ-406700/A-FordPass Disassociation*

The PPPInterfaceClient shall allow a user to disassociate a FordPass Account from an in-vehicle Profile via the Edit Menu.

4.4.2.3   *PPP-REQ-442714/A-Maximum FordPass Associations per Profile - PPPInterfaceClient*

The PPPInterfaceClient shall only allow one FordPass Account to be associated to one Personal Profile. If a Personal Profile is already associated to a FordPass Account, indicated via pppFordPassAssociationStatusBroadcast(Profile# = Associated), the PPPInterfaceClient shall disable (grey-out, make unavailable, etc.) the respective button in the Edit Menu.

4.4.2.4   *PPP-REQ-447797/A-IPPT Utilization*

The PPPInterfaceClient shall request a vehicle token and establish a secure connection with the PPPOffBoardClient via IPPT. See latest IP Pass Through Server SPSS (Reference #) for more information.

4.4.2.5   *PPP-REQ-447798/A-IPPT Utilization - Request*

The PPPInterfaceClient shall use the IPPT framework to send user credential information to the PPPOffBoardClient. The PPPInterfaceClient shall provide the following data in the IPPT token request:

- **Request Parameters**
  - **Feature ID =** ??????
  - **ECU ID =** ECG (3)
  - **Policy Validation =** No
  - **URL** = www.????.ford.com
  - **Scope** = generic description of why token is needed (optional)

4.4.2.6   *PPP-REQ-447799/A-IPPT Utilization - When to Request*

The IPPT vehicle token shall be requested by the PPPInterfaceClient when either:
- The user first enters the FordPass Association screen on the PPPInterfaceClient, OR
- The user first enters the Setup Wizard or Profile Creation

The token shall only be requested by the PPPInterfaceClient when no token is already available. After retrieval of token, token will be saved in memory, along with token expiration time. The token and expiration time will need to persist through ignition cycles. Following a successful response, connection will be closed. The same token will be used to open the connection for each user credential required to be authenticated until the token has expired.

Request for new token should occur following token expiration when next user credential is required to be authenticated.

4.4.2.7   *PPP-REQ-447800/A-IPPT Token Error States*

TBD – Need to determine all Error responses and PPPInterfaceClient will handle them.

4.4.2.8   *PPP-REQ-442713/A-FordPass Associations – Send credentials via IPPT*

After a vehicle token has been received, when the FordPass credentials are entered by the user and requested to be sent, the PPPInterfaceClient shall send HTTP REQUEST to the PPPOffBoardClient to have them authenticated. <TBD on what the request looks like

4.4.2.9   *PPP-REQ-406702/A-FordPass Association Retry Attempts*

The PPPInterfaceClient shall allow 5 consecutive attempts (either during profile creation or via the Edit Menu) per key cycle to associate a FordPass Account to a Personal Profile. Any attempt afterwards shall result in the PPPInterfaceClient displaying a failure notification to the user.

4.4.2.10   *PPP-REQ-441587/A-FordPass Association – Authentication Status Wait Time*

After sending HTTP REQUEST per REQ-442713, the PPPInterfaceClient shall wait for a HTTP RESPONSE from the PPPOffBoardClient for a max of 10s. If no response is received within that time, the PPPInterfaceClient shall display a notification to the user indicating that the request has timed out. The PPPInterfaceClient shall allow a retry (if max retries have not been reached).

4.4.2.11   *PPP-REQ-447802/A-FordPass Association - Authentication Status - Check AccountID*

After sending HTTP REQUEST per REQ-442713, when the PPPInterfaceClient receives an HTTP RESPONSE from the PPPOffBoardClient with a status of "Success" and an AccountID, the PPPInterfaceClient shall send pppAccountID to the PPPServer with the following:
- accountID = the received AccountID in the HTTP Response
- newProfile =
    - o   0, if the FordPass Association is being done to an existing Personal Profile
    - o   1, if the FordPass Association is being done for a new profile (profile creation/setup wizard)
- PersIndex = only applicable if newProfile = 0, this shall be set to the PersIndex of the existing Personal Profile from which the association is being attempted

4.4.2.12   *PPP-REQ-441588/A-FordPass Association – Authentication Status - Success*

After receiving pppAccountID(ResponseCode = Ok), the PPPInterfaceClient shall display a notification to the user indicating that the request was successful, and continue as per REQ-442720-Central Portable Profile Creation from Off Board Profile – Setup Wizard Settings.

4.4.2.13   *PPP-REQ-441589/A-FordPass Association – Authentication Status - Fail*

After sending HTTP REQUEST per REQ-442713, when the PPPInterfaceClient receives an HTTP RESPONSE with a status of "Fail" from the PPPOffBoardClient, the PPPInterfaceClient shall display a notification to the user indicating that the request has failed. The PPPInterfaceClient shall allow a retry (if max retries have not been reached).

4.4.2.14   *PPP-REQ-442715/A-FordPass Association – Authentication Status – Already In Use*

After receiving pppAccountID(ResponseCode = Already In Use, PersID), the PPPInterfaceClient shall display a notification to the user indicating that the provided username and password area already associated to another personal profile. The PPPInterfaceClient shall allow a retry (if max retries have not been reached). The notification shall offer:
- a Recall button that would allow the user to recall the PersID indicated in pppAccountID
    - o   If pressed, the PPPInterfaceClient shall send InfotainmentRecall_Rq set to the PersID indicated in pppAccountID. The creation process that was in process shall then be cancelled, aborted, and the Setup Wizard shall not remind the user to continue profile setup for that profile.
- a Cancel button to cancel the FordPass association process

4.4.2.15   *REQ-447804/A-FordPass Disassociation Request*

When the user selects to disassociate their FordPass Account from their Personal Profile, the PPPInterfaceClient send pppDisassociateFordPass(PersID) to the PPPServer, where PersID is the PersIndex of the profile for which the disassociation is being requested.

4.4.3   White Box View

4.4.3.1   *Activity Diagrams*

4.4.3.2   *Sequence Diagrams*

4.5 PPP-FUN-REQ-425146/A-Auto Save

4.5.1 Use Cases

4.5.1.1 PPP-UC-REQ-420579/A-Minor change made to positional settings (Smart)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is configured for Smart Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the auto save applicable settings PPPServer determines that the change was a Minor one
Post-conditions	PPPServer sends save request to the AutoSavePositionClient AutoSavePositionClient saves vehicle positional settings. PPPServer receives notification from AutoSavePositionClient, indicating that positional settings have been retained. PPPServer clears previous adjustment information
List of Exception Use Cases	Manual Save while Auto Save enabled Recall while Auto Save enabled
Interfaces	CAN, SoA

4.5.1.2 PPP-UC-REQ-425118/A-Any change made to positional settings (Simple)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is configured for Simple Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the auto save applicable settings PPPServer determines that the change was a Major or Minor one
Post-conditions	PPPServer requests PPPInterfaceClient display a notification asking for user feedback User selects 'Save' PPPServer sends save request to the AutoSavePositionClient AutoSavePositionClient saves vehicle positional settings. PPPServer receives notification from AutoSavePositionClient, indicating that positional settings have been retained. PPPServer clears previous adjustment information
List of Exception Use Cases	Manual Save while Auto Save enabled Recall while Auto Save enabled
Interfaces	CAN, SoA

4.5.1.3 PPP-UC-REQ-425120/A-Any change made to positional settings – Ignore (Simple)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is configured for Simple Auto Save Feature is Enabled No active Inhibit Requests

Scenario Description	User adjusts one of the auto save applicable settings PPPServer determines that the change was a Major or Minor one
Post-conditions	PPPServer requests PPPInterfaceClient display a notification asking for user feedback User selects 'Ignore' PPPInterfaceClient sends Ignore response to PPPServer PPPServer aborts Auto Save actions but retains adjustments PPPServer does not request a save
List of Exception Use Cases	Manual Save while Auto Save enabled Recall while Auto Save enabled Auto Save Prompt times out or blocked
Interfaces	CAN, SoA

4.5.1.4   PPP-UC-REQ-420580/A-Major change made to positional settings – Save (Smart)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is configured for Smart Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the auto save applicable settings PPPServer determines that the change was a Major one
Post-conditions	PPPServer requests PPPInterfaceClient display a notification asking for user feedback User selects 'Save' PPPServer sends save request to the AutoSavePositionClient AutoSavePositionClient saves vehicle positional settings. PPPServer receives notification from AutoSavePositionClient, indicating that positional settings have been retained. PPPServer clears previous adjustment information
List of Exception Use Cases	Manual Save while Auto Save enabled Recall while Auto Save enabled Auto Save Prompt times out or blocked
Interfaces	CAN, SoA

4.5.1.5   PPP-UC-REQ-420581/A-Major change made to positional settings – No Save (Smart)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is configured for Smart Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the auto save applicable settings PPPServer determines that the change was a Major one
Post-conditions	PPPServer requests PPPInterfaceClient display a notification asking for user feedback User selects 'No Save' PPPServer does not request a save PPPServer clears previous adjustment information PPPServer enters Trap state, where adjustment evaluation suspends until next key cycle

List of Exception Use Cases	Manual Save while Auto Save enabled Recall while Auto Save enabled Auto Save Prompt times out or blocked
Interfaces	CAN, SoA

4.5.1.6 PPP-UC-REQ-420582/A-Major change made to positional settings – Change Profile (Smart)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is configured for Smart Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the auto save applicable settings PPPServer determines that the change was a Major one
Post-conditions	PPPServer requests PPPInterfaceClient display a notification asking for user feedback User selects 'Change Profile' PPPServer does not request a save PPPInterfaceClient transitions to a profile selection screen PPPServer does not clear previous adjustment information (in the event user does not perform a profile recall, these could still be acted upon)
List of Exception Use Cases	Manual Save while Auto Save enabled Recall while Auto Save enabled Auto Save Prompt times out or blocked
Interfaces	CAN, SoA

4.5.1.7 PPP-UC-REQ-425121/A-Any change made to positional settings – Change Profile (Simple)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is configured for Simple Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the auto save applicable settings PPPServer determines that the change was a Major or Minor one
Post-conditions	PPPServer requests PPPInterfaceClient display a notification asking for user feedback User selects 'Change Profile' PPPServer does not request a save PPPInterfaceClient transitions to a profile selection screen PPPServer does not clear previous adjustment information (in the event user does not perform a profile recall, these could still be acted upon)
List of Exception Use Cases	Manual Save while Auto Save enabled Recall while Auto Save enabled Auto Save Prompt times out or blocked
Interfaces	CAN, SoA

4.5.1.8 PPP-UC-REQ-420583/A-Manual Save while AutoSave enabled

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the autosave applicable settings User performs Manual Save
Post-conditions	PPPServer aborts AutoSave actions PPPServer clears previous adjustment information
List of Exception Use Cases	
Interfaces	CAN, SoA

4.5.1.9 PPP-UC-REQ-420584/A-Recall while AutoSave enabled

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the autosave applicable settings User performs Recall
Post-conditions	PPPServer aborts AutoSave actions PPPServer clears previous adjustment information
List of Exception Use Cases	
Interfaces	CAN, SoA

4.5.1.10 PPP-UC-REQ-420585/A-AutoSave Prompt times out or blocked (Smart)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is configured for Smart Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the auto save applicable settings PPPServer determines that the change was a Major one
Post-conditions	PPPServer requests PPPInterfaceClient display a notification asking for user feedback User does not make a selection or prompt is blocked PPPInterfaceClient sends timeout/block response to PPPServer PPPServer aborts Auto Save actions but retains adjustments PPPServer does not request a save
List of Exception Use Cases	
Interfaces	CAN, SoA

4.5.1.11 PPP-UC-REQ-425122/A-AutoSave Prompt times out or blocked (Simple)

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is configured for Simple Auto Save Feature is Enabled No active Inhibit Requests
Scenario Description	User adjusts one of the auto save applicable settings PPPServer determines that the change was a Major or Minor one
Post-conditions	PPPServer requests PPPInterfaceClient display a notification asking for user feedback User does not make a selection or prompt is blocked

	PPPInterfaceClient sends timeout/block response to PPPServer
	PPPServer aborts Auto Save actions but retains adjustments
	PPPServer does not request a save
List of Exception Use Cases	
Interfaces	CAN, SoA

4.5.1.12 *PPP-UC-REQ-420586/A-AutoSave inhibited*

Actors	PPPServer, PPPInterfaceClient
Pre-conditions	Auto Save Feature is Enabled
	No active Inhibit Requests
Scenario Description	Autosave becomes inhibited (PPPServer receives at least one inhibit request).
Post-conditions	PPPServer sets AutoSave to "Inactive"
	PPPServer clears previous adjustment information and stops evaluating changes
List of Exception Use Cases	
Interfaces	CAN, SoA

4.5.2   Requirements

4.5.2.1   *PPP-REQ-420440/A-Prompt2 Timer*
The PPPInterfaceClient shall have a configurable timer, T_Prompt2, which shall be the maximum time the PPPInterfaceClient shall display a requested prompt. This timer shall be configurable via DID.

4.5.2.2   **PPP-TMR-REQ-420640/B-T_Prompt2**

Name	**Description**	**Units**	**Range**	**Resolution**	**Default**
T_Prompt2	Maximum time the PPPInterfaceClient shall display a requested prompt. Note: Use the default value	sec	0-70	1	8

4.5.2.3   *PPP-REQ-420441/A-Start T_Prompt2*
The PPPInterfaceClient shall start T_Prompt2 when it displays a requested prompt per setAutoSavePrompt(PromptControl = "Display").

4.5.2.4   *PPP-REQ-420442/B-Prompt Options (Smart)*
When configured for 'Smart' Auto Save, the PPPInterfaceClient shall provide a prompt with the below options when setAutoSavePrompt is sent for PromptType's 0x0 - 0x5:
- Save
- No (No longer Save for the ignition cycle)
- Change Profile

4.5.2.5   *PPP-REQ-425129/B-Prompt Options (Simple)*
When configured for 'Simple' Auto Save, the PPPInterfaceClient shall provide a prompt with the below options when setAutoSavePrompt is sent for PromptType's 0x0 - 0x5:
- Save
- No (equating to an Ignore)
- Change Profile

4.5.2.6 *PPP-REQ-420443/A-Prompt Persistence*

The PPPInterfaceClient shall display a requested prompt until setAutoSavePrompt(PromptControl = "Close") is received for the respective PromptType, or unit T_Prompt2 expires.

4.5.2.7 *PPP-REQ-420444/A-Prompt Variations*

The PPPInterfaceClient shall have variations for the prompt, including HUD, Seat, Steering Wheel, Mirror, Pedal, and Multiple.

4.5.2.8 *PPP-REQ-420445/A-Prompt Response - Change Profile*

The PPPInterfaceClient shall send setAutoSavePrompt(PromptResponse = "Change Profile") when the user requests to change profile via the prompt, and display the profile selection screen to the user.

4.5.2.9 *PPP-REQ-420446/A-Prompt Response - No Save*

The PPPInterfaceClient shall send setAutoSavePrompt(PromptResponse = "No Save") when the user requests to not save the adjustment via the prompt.

4.5.2.10 *PPP-REQ-420447/A-Prompt Response - Save*

The PPPInterfaceClient shall send setAutoSavePrompt(PromptResponse = "Save") when the user requests to save the adjustment via the prompt.

4.5.2.11 *PPP-REQ-420448/A-Prompt Response - Blocked*

If a prompt cannot be displayed, the PPPInterfaceClient shall send setAutoSavePrompt(PromptResponse = "Blocked") and not display any prompt.

4.5.2.12 *PPP-REQ-425145/A-Prompt Response - Ignore*

The PPPInterfaceClient shall send setAutoSavePrompt(PromptResponse = "Ignore") when the user requests to ignore the adjustment via the prompt.

4.5.2.13 *PPP-REQ-420449/A-Prompt Response - Timeout*

If T_Prompt2 expires, the PPPInterfaceClient shall send setAutoSavePrompt(PromptResponse = "Timeout").

4.5.2.14 *PPP-REQ-420450/A-Prompt Close Upon User Response*

The PPPInterfaceClient shall close a requested prompt upon user response.

4.5.2.15 *PPP-REQ-420464/A-User Auto Save Setting Status - Turn Off*

When autoSaveFeatureStatusBroadcast(AutoSaveFeatureStatus = "Enable") and the user turns off Auto Save, then the PPPInterfaceClient shall send setAutoSaveSetting(AutoSaveSettingRequest = "Off").

4.5.2.16 *PPP-REQ-420470/A-User Auto Save Setting Status - Turn On*

When autoSaveFeatureStatusBroadcast(AutoSaveFeatureStatus = Inactive) and the user turns on Auto Save, the PPPInterfaceClient shall send setAutoSaveSetting(AutoSaveSettingRequest = "On").

4.5.2.17 *PPP-REQ-420466/A-User Auto Save Setting Status - Auto Save Off Message*

When the autoSaveFeatureStatusBroadcast(AutoSaveFeatureStatus) changes from "(0x2) Enable" to "(0x0) Inactive", the PPPInterfaceClient shall display a notification to the user indicating that Auto Save is no longer assisting with retaining settings (settings are now being protected).

4.5.2.18 *PPP-REQ-420467/A-User Auto Save Setting Status - Auto Save On Message*

When the autoSaveFeatureStatusBroadcast(AutoSaveFeatureStatus) changes from "(0x0) Inactive" to "(0x2) Enable", the PPPInterfaceClient shall display a notification to the user indicating that Auto Save is now assisting the user with retaining settings.

4.5.2.19 *PPP-REQ-420465/A-User Auto Save Setting Status - Display when Feature Enabled*

While autoSaveFeatureStatusBroadcast(AutoSaveFeatureStatus = "Enable"), the PPPInterfaceClient shall make the Auto Save user settings visible and accessible by the user.

4.5.2.20 *PPP-REQ-420468/A-User Auto Save Setting Status - Display when Feature Inactive*

While autoSaveFeatureStatusBroadcast(AutoSaveFeatureStatus = Inactive), the PPPInterfaceClient shall make the Auto Save user setting visible and accessible by the user.

4.5.2.21 *PPP-REQ-420469/A-User Auto Save Setting Status - Display when Feature Disabled*

While autoSaveFeatureStatusBroadcast(AutoSaveFeatureStatus = Disabled), the PPPInterfaceClient shall hide the Auto Save user setting for the active profile on the vehicle.

4.5.2.22 *PPP-REQ-420628/A-Auto Save User Setting*

The PPPServer shall maintain an Auto Save user setting for each profile offered by Enhanced Memory.

4.5.2.23 *PPP-REQ-420629/A-Retrieve Auto Save User Setting*

When any of the below conditions are met, the PPPInterfaceClient shall send getAutoSaveSetting to the PPPServer in order to request the current Auto Save user setting:
- After display reset OR
- After display recovers from error state during Ignition_Status = "Run" OR
- After ECU Wakeup OR
- If Auto Save user setting cache is lost or corrupted
- Upon entering the Enhanced Memory menu when PPPInterfaceClient does not have any data cached
  - In this case getAutoSaveSetting shall be called every 5s for 30s max, or until autoSaveSettingBroadcast is received

4.5.2.24 *PPP-REQ-420630/A-Cache Auto Save User Setting*

The PPPInterfaceClient shall cache the latest value of the Auto Save user setting received via autoSaveSettingBroadcast. This cache shall be cleared upon shutdown.

4.5.2.25 *PPP-REQ-420632/A-Retrieve Auto Save Feature Status*

When any of the below conditions are met, the PPPInterfaceClient shall send getAutoSaveFeatureStatus to the PPPServer in order to request the current Auto Save feature status:
- After display reset OR
- After display recovers from error state during Ignition_Status = "Run" OR
- After ECU Wakeup OR
- If Auto Save feature status cache is lost or corrupted
- Upon entering the Enhanced Memory menu when PPPInterfaceClient does not have any data cached
  - In this case getAutoSaveFeatureStatus shall be called every 5s for 30s max, or until autoSaveFeatureStatusBroadcast is received

4.5.2.26 *PPP-REQ-420633/A-Cache Auto Save Feature Status*

The PPPInterfaceClient shall cache the latest value of the Auto Save feature status received via autoSaveFeatureStatusBroadcast. This cache shall be cleared upon shutdown.

4.5.3   White Box View

4.5.3.1   *Activity Diagrams*

4.5.3.2   *Sequence Diagrams*

5   Appendix: Reference Documents

Reference #	Document Title
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