Research & Vehicle Technology
"Product Development"

Feature – Customer Connectivity Settings Client

APIM Infotainment
Subsystem Part Specific Specification (SPSS)

Version 1.3
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Version Date: September 5, 2019

FORD CONFIDENTIAL

Revision History

Date	Version	Notes	
June 22, 2018	1.0	**Initial Release**	**OBSOLETE due to release of v1.0.1**
June 27, 2018	1.0.1	**Corrected Initial Release**	**ASIMUKHI: THIS RELEASE CONTAINS CORRECTIONS AND MAKES THE RELEASE V1.0 OBSOLETE.**
	CCOIv2-FUN-REQ-318490/C-Change entity setting		kfent1: added paragraph for sequence diagrams which got lost in last release.
	CCOIv2-REQ-313180/B-Default on Lifecycle mode change		bhamach3: Correction - default states are defined in entity Rules instead of configuration
	CCOIv2-REQ-296372/B-Diagnostics Parameters for Distributed State Machine		bhamach3: config parameters/DTCs from previous feature bundles removed
	CCOIv2-TBL-504779/B-Diagnostics Parameters		bhamach3: config parameters from previous feature bundles removed
June 22, 2018	1.1	**Updated Release**	
	IIR-REQ-313614/B-Customer Connectivity Settings API		kfent1: removed MD-REQ-313617
	MD-REQ-313623/B-EntityStatus		kfent1: new Data Element API
	MD-REQ-328277/A-MetaSettings		kfent1: new Data Element API
	MD-REQ-328083/A-AuthorizationStatus		kfent1: new MD for Authorization Status. See new Section CCOIv2-FUN-REQ-324870/A-Authorization for Info.
	CCOIv2-REQ-315470/B-Connectivity Customer Settings Menu		bhamach3: REQ-315476 removed
	CCOIv2-REQ-315478/B-Entry into Settings Menu		kfent1: new REQ
	CCOIv2-REQ-315481/B-Modem Activation and Authorization		bhamach3: REQ-318818 descoped
	CCOIv2-REQ-318209/B-Modem Activation		bhamach3: clarification - any meta entity default opt-in state configurable
	CCOIv2-REQ-318817/B-Modem Activation - not enabled per default		bhamach3: clarification - pop-up effect removed - defined in policy files
	CCOIv2-REQ-318211/B-User Authorization		bhamach3: clarification - authorization dependencies removed - defined in policy files
	STR-506065/C-Functional Definition		kfent1: added CCOIv2-FUN-REQ-324120/A-CCSManager synchronization
	CCOIv2-FUN-REQ-324120/A-CCSManager synchronization		kfent1: new FUN CCOIv2-FUN-REQ-324120/A-CCSManager synchronization
	CCOIv2-REQ-324471/A-Synchronization States		kfent1: new Req
	CCOIv2-REQ-324472/A-Synchronized State		kfent1: new Req
	CCOIv2-REQ-324473/A-Synchronizing State		kfent1: new Req
	CCOIv2-REQ-328714/A-Error State		kfent1: new Req
	CCOIv2-REQ-328715/A-Readability of Synchronization State		kfent1: new Req
	CCOIv2-STM-REQ-324474/A-CCS Manager StateMachine		kfent1: new Req
	CCOIv2-FUN-REQ-324870/A-Authorization		bhamach3: Authorization section added
	CCOIv2-UC-REQ-296268/C-Avenue B full authorization		bhamach3: clarification - authorizaton depends on authorization FTCP command
	CCOIv2-UC-REQ-325945/A-De-authorization via Reset		bhamach3: new authorization use case

CCOIv2-UC-REQ-326207/A-backend driven authorization	bhamach3: new authorization use case
CCOIv2-REQ-324934/A-Authorization status change triggers	kfent1: new REQ for Authorization
CCOIv2-REQ-324884/A-Authorization status change	kfent1: new REQ for Authorization
CCOIv2-REQ-325856/A-Authorization enabled	kfent1: new Req
CCOIv2-REQ-325858/A-Authorization disabled	kfent1: new Req
CCOIv2-REQ-328716/A-Publish Authorization State	bhamach3: new requirement
CCOIv2-SD-REQ-325943/A-Receiving Authorization change	kfent1: new authorization SD (seperated out of the Avenue B prompt SD)c
CCOIv2-FUN-REQ-318485/B-User Prompt and Modem activation	kfent1: added "Sequence Diagrams" paragraph, added REQ-321293, REQ-321294, REQ-321295
504763/B-Use Cases	bhamach3: Requirement REQ-313034 removed
CCOIv2-UC-REQ-296268/C-Avenue B full authorization	bhamach3: clarification - authorizaton depends on authorization FTCP command
556167/B-Requirements	bhamach3: Requirement REQ-296291 removed.
CCOIv2-REQ-313015/B-User Prompt Triggers	bhamach3: Acknowledgment prompt item removed
CCOIv2-REQ-296273/B-Upload of UserPrompt_Rsp	bhamach3: Clarification of configurable expiration
CCOIv2-REQ-318318/B-Retries of OnBoard triggered UserPrompt_Rq	bhamach3: clarification added
CCOIv2-REQ-318586/B-No FTCP alert on expiration of OnBoardPolicyServer triggered prompt	bhamach3: Rephrased only
CCOIv2-REQ-296274/B-Retry Persistence of User Prompt	kfent1: new Req
CCOIv2-REQ-296275/B-Effect of Master Reset on pending prompt requests	bhamach3: reset scenarios clarified
CCOIv2-REQ-306742/B-Triggering Avenue A prompt	bhamach3: Conditions for Ave A clarified
CCOIv2-REQ-318320/B-UserPrompt_Rq Handling promptType 0x01	bhamach3: HMI reference corrected
CCOIv2-REQ-318322/B-UserPrompt_Rq Handling promptType 0x03	bhamach3: HMI reference updated
CCOIv2-REQ-296289/C-initialPrompt UserPrompt_Rsp	kfent1: new Req
CCOIv2-REQ-296292/C-Effects of accepting a UserPrompt	bhamach3: Clarification - Requirement reference added.
CCOIv2-REQ-296290/C-Queue Prompts to be Shown	bhamach3: Clarified - synchronization state dependency removed
CCOIv2-SD-REQ-321293/A-Offboard triggerd User Prompt	kfent1: new SD
CCOIv2-SD-REQ-321294/A-Avenue A partial activation	kfent1: new SD
CCOIv2-SD-REQ-321295/A-Avenue B full authorization	kfent1: updated diagram to show split authorization and Avenue B prompt
CCOIv2-FUN-REQ-317862/B-Error and local update prompt handling	bhamach3: Clarification - Client reference removed in req. name
555154/B-Requirements	REQ-318325 removed
CCOIv2-REQ-317863/B-Error Pop-Up "Feature Unavailable"	kfent1: updated Req

	CCOIv2-REQ-317866/B-Local Update Pop-Up	bhamach3: Clarification - Synchronization state clarified
	CCOIv2-REQ-317868/B-General Pop-Up Priority	bhamach3: Acknowledgment reference removed
	CCOIv2-UC-REQ-318886/B-CCSManager triggers OffBoardSynchronization	kfent1: aligned naming to meet CCSManager
	CCOIv2-REQ-296327/B-Maintenance of LastKnownGood Data	bhamach3: Clarification - requirement reference corrected
	CCOIv2-CLD-REQ-296336/B-ServerOffBoardSyncHandling	kfent1: removed REQ-296360; 296358; 296359
	CCOIv2-STM-REQ-296345/B-FTCP Query Function	kfent1: removed state transition
	CCOIv2-REQ-296347/B-OffBoard Synchronization FTCP Periodic Query Inhibition During Ignition Cycle	bhamach3: REQ reference updated
	CCOIv2-REQ-296348/B-OffBoard Synchronization FTCP Query Retry Configurable Interval	bhamach3: REQ reference updated
	CCOIv2-REQ-296349/B-OffBoard Synchronization FTCP Query Trigger Configurable Timeout	bhamach3: REQ reference updated
	CCOIv2-REQ-296338/B-OffBoard Synchronization FTCP Update	bhamach3: entityRules reference removed; REQ-318487 removed
	CCOIv2-REQ-318484/B-entity settings check for completeness	bhamach3: entityRules reference removed
	CCOIv2-REQ-296356/B-Check consentSequenceId for Updates via FTCP	bhamach3: Clarification - check in commands and query responses
	CCOIv2-REQ-296357/B-Update OnBoard consentSequenceId for Updates via FTCP	bhamach3: Clarification - Requirement reference updated.
	492446/B-Sequence Diagrams	kfent1: added REQ-321883, REQ-321884
	CCOIv2-SD-REQ-321883/A-OffBoardPolicyClient triggers OffBoardSynchronization	kfent1: new SD
	CCOIv2-SD-REQ-321884/A-CCSManager triggers OffBoardSynchronization	kfent1: new SD
	CCOIv2-FUN-REQ-318490/C-Change entity setting	kfent1: added paragraph for sequence diagrams which got lost in last release.
	556170/B-Requirements	bhamach3: REQ-328368 added, REQ-313180 removed
	CCOIv2-REQ-296401/B-ConsentSequenceId and Provisioning	kfent1: updated REQ
	CCOIv2-REQ-313179/B-Default Opt-in entity values	bhamach3: Clarification of opt-in parameter, REQ-318334 removed
	CCOIv2-REQ-318338/B-Default on Reset	bhamach3: Clarification of Reset scenarios
	CCOIv2-REQ-318374/B-Default on Lifecycle Mode change	kfent1: Clarification of Default Lifecycle
	CCOIv2-REQ-318335/B-Region dependent default values	bhamache3: entityRules dependency removed
	CCOIv2-REQ-328368/A-Subscription and Policy entity values	kfent1: new REQ
	CCOIv2-REQ-296415/B-Effects of Reset	kfent1: updated Effects
	CCOIv2-REQ-296879/B-Entity toggle switch changed to "on"	bhamach3: Clarification of references
	CCOIv2-REQ-296880/B-Entity toggle switch changed to "off"	bhamach3: Clarification of references

CCOIv2-REQ-315469/B-Entity States Update on settings change	bhamach3: clarification - data is not sent but updated for API
492618/B-Sequence Diagrams	kfent1: added sequence diagram REQ-321292
CCOIv2-SD-REQ-321292/A-Change entity setting by User	kfent1: new SD
CCOIv2-FUN-REQ-296186/B-Policy Enforcement	bhamach3: structure revision
504785/B-Static View	bhamach3: output policy enforcer reference removed.
CCOIv2-CLD-REQ-296382/B-CCSInputPolicyEnforcer	bhamach3: reference of entityRules removed.
504600/B-Use Cases	bhamach3: requirement structure update
CCOIv2-UC-REQ-296189/B-Enforce policies	bhamach3: WIR interface clarified, ign status reference removed, output policy enforcer reference removed, FCI policy enforcement UC removed, acknowledgment UC removed
CCOIv2-UC-REQ-328038/A-Feature Input PolicyEnforcement	bhamach3: requirement added
CCOIv2-UC-REQ-313323/B-Meta Input PolicyEnforcement	bhamach3: exceptions added
504786/B-Requirements	bhamach3: Exception for unprovisioned state added, feature categories removed, enforcement required for any feature
CCOIv2-REQ-326672/A-Data access control	kfent1: new Req
CCOIv2-REQ-326670/A-Meta entity enforcement	bhamach3: enforcement details added
CCOIv2-REQ-326671/A-Feature entity input enforcement	bhamach3: enforcement details added
CCOIv2-REQ-326826/A-Data categorization	bhamach3: clarification of service assignment to entities
CCOIv2-REQ-312332/B-Policy Enforcement Components	bhamach3: requirement rephrased for general use on input and output policy enforcer
CCOIv2-REQ-296383/B-Operation of PolicyEnforcer	bhamach3: requirement rephrased for general use on input and output policy enforcer
CCOIv2-REQ-296384/B-Start Up Order of PolicyEnforcer	bhamach3: output policyenforcer reference removed
CCOIv2-REQ-312335/B-Policy Enforcement disabled in Theft Mode	bhamach3: Requirement reference corrected
CCOIv2-REQ-324869/A-Policy Enforcement disabled in un-provisioned state	bhamach3: New requirement
CCOIv2-REQ-328100/A-Validation of Policy Enforcement	kfent1: new Req
CCOIv2-REQ-296876/B-Visual Feedback based on Settings and Policy Table Extension	bhamach3: switch layout definition changed
CCOIv2-UC-REQ-296260/B-Configuration Triggered Policy Table Selection	bhamach3: requirement reference added
CCOIv2-REQ-311522/B-Default Policy Tables	bhamach3: requirement reference added, entityRules reference removed
CCOIv2-REQ-296313/B-Meta Data	kfent1: no change in req. Revision created accidentally. Could not be deleted
CCOIv2-TBL-504768/B-Meta Data Description Table	bhamach3: entityRules reference removed
CCOIv2-REQ-296314/B-Policy Table Meta Data	bhamach3: Clarification - Requirement reference added.
CCOIv2-REQ-296318/B-Meta Data Generation	kfent1: added 324478 for FNV2
CCOIv2-REQ-296319/B-Platform Version	bhamach3: Clarification - Requirement reference added, entityRules reference removed

CCOIv2-REQ-296320/B-Major Version	bhamach3: Clarification - Requirement reference added.
CCOIv2-REQ-296321/B-Minor Version	bhamach3: Clarification - Requirement reference added.
CCOIv2-REQ-324478/A-Behaviour on FNV2 architecture	bhamach3: Clarification added for FNV2 meta data generation.
CCOIv2-REQ-296316/B-Active Policy Table Set	bhamach3: entityRules reference removed
CCOIv2-REQ-312330/B-Policy Table Query	bhamach3: Clarification - Requirement reference added.
CCOIv2-REQ-296317/B-Missing Policy Table	bhamach3: Clarification - Requirement reference added.
CCOIv2-FUN-REQ-292436/B-Policy Table Definition	bhamach3: Policy Table parameters updated
CCOIv2-REQ-296414/B-Policy Tables	bhamach3: entityRules reference removed, new parameters are part of the PTE file; Feature Manifest logic added
CCOIv2-REQ-328986/A-Policy File compression	bhamach3: compression split from general Policy Table requirement
CCOIv2-REQ-328987/A-Merge Policy Table Extension and Feature Manifest	bhamach3: new requirement
CCOIv2-REQ-296305/B-Configuration and Preload	bhamach3: entityRules reference removed
REQ-328988/A-Manual Policy Upload	kfent1: new Req
CCOIv2-REQ-296368/B-User Friendly Messages variables	bhamach3: references added
584657/A-General explanations	kfent1: new REQ
CCOIv2-REQ-318822/B-unique identifier	kfent1: new REQ
CCOIv2-REQ-318823/B-regions	kfent1: new REQ
CCOIv2-REQ-328989/A-entityBitSetting	kfent1: new REQ
CCOIv2-REQ-329000/A-entity bit states	kfent1: new REQ
CCOIv2-REQ-329002/A-action	kfent1: new REQ
CCOIv2-REQ-329003/A-header (feature manifest)	kfent1: new REQ
584671/A-CCSEntityDefinitions	kfent1: new REQ
CCOIv2-REQ-329004/A-DefaultEntitySettingPolicies	kfent1: new REQ
CCOIv2-REQ-329005/A-DefaultEntityLifecycleModeSettings	kfent1: new REQ
CCOIv2-REQ-329006/A-Default settings trigger dependency logic	kfent1: new REQ
CCOIv2-REQ-329007/A-dependencies	kfent1: new REQ
584672/A-CCSFeaturePolicies	kfent1: new REQ
CCOIv2-REQ-329017/A-infoText_subscribed_locked	kfent1: new REQ
CCOIv2-REQ-329018/A-infoText_unsubscribed_unlocked	kfnet1: new REQ
CCOIv2-REQ-328968/A-menuConsentPrompt	kfent1: new REQ
CCOIv2-REQ-328971/A-Special confirmation prompts for Vehicle Connectivity Entity	kfent1: added REQ-Section for Vehicle Connectivity off transitions
CCOIv2-REQ-328972/A-confirmation_off_plusIVSU	kfent1: transferred functional logic from HMI Specification to SPSS REQ supporting CR688
CCOIv2-REQ-328973/A-confirmation_off_plusLBI	kfent1: New REQ supporting CR668 PAAK/LBI
CCOIv2-REQ-328974/A-confirmation_off_plusLBI_IVSU	kfent1: new REQ supporting LBI and IVSU at the same time
CCOIv2-REQ-329020/A-information	kfent1: new REQ
CCOIv2-REQ-329133/A-textBody	kfent1: new REQ
CCOIv2-REQ-329135/A-pop-up headers (CFM)	kfent1: new REQ

	CCOI-REQ-303279/B-User identification via paired phone for data sharing reminder Pop-Up	bhamach3: clarification added
	CCOIv2-UC-REQ-312051/B-Theft Mode Activation	kfent1: updated UC
	CCOIv2-REQ-312152/B-Theft Mode Activation	bhamach3: Clarification of theft mode functionality
	CCOIv2-REQ-312150/B-Theft Mode De-Activation	bhamach3: Clarification of re-activated policy enforcer functionality
	CCOIv2-REQ-313028/B-Theft Mode value missing	bhamach3: Clarification - as output policy enforcer descoped, no backend communication controlled
	UC-REQ-306740/B-Network Disconnect	bhamach3: config parameter removed
	UC-REQ-312154/B-Network Re-Connect	bhamach3: config parameter removed
	531086/B-Requirements	bhamach3: REQ-312183 (config parameter) removed
	REQ-312693/B-Reset keeps Network Disconnect	kfent1: updated REQ
	REQ-312694/B-Reset enters Network Disconnect	bhamach3: additional communication required, if backend driven pop-ups pending
	504778/B-Diagnostics Requirements	bhamach3: Acknowledgment parameter (REQ-317029) removed
	CCOIv2-TBL-504779/C-Diagnostics Parameters	bhamach3: synchronization state added
	CCOIv2-REQ-296376/B-Diagnostics Parameters for Entity Settings	bhamach3: Clarification - cycling read-out details added, synchronization logic after writing DID removed, as DID is only meant for read-out.
	CCOIv2-TBL-504780/B-Diagnostics Parameters	bhamach3: Parameter Table revised
	CCOIv2-TBL-504782/B-Diagnostic Parameters	bhamach3: removed default parameter, as defined per diagnostic specification
	CCOIv2-REQ-296381/B-Diagnostics Parameters for User Prompt Broker	bhamach3: Clarification - cycling read-out details added
	CCOIv2-TBL-504783/B-Diagnostics Parameters	bhamach3: Clarification - parameter names updated per diagnostic spec
	STR-506066/B-Appendix: Reference Documents	bhamach3: document references updated
January 31, 2019	1.2	Updated Release	
	CCOI-TBL-331447/D-Glossary	bhamach3: Clarification - Policy Enforcement / Blacklist
	CCOI-TBL-331448/E-Abbreviations	bhamach3: SCF added, FM (Feature Manifest) removed
	MD-REQ-313623/C-EntityStatus	bhamach3: parameter name correction kfent1: removed MetaSettingsPerEntity
	CCOIv2-REQ-324473/B-Synchronizing State	kfent1;: removed "active" from "active Policy Table"
	CCOIv2-FUN-REQ-324870/B-Authorization	kfent1: changed wording and removed Anonymization
	CCOIv2-UC-REQ-296268/D-Avenue B full authorization	removed pre condition of unauthorized vehicle
	CCOIv2-UC-REQ-325945/B-De-authorization	kfent1: made generic for deauthorization
	CCOIv2-UC-REQ-296268/D-Avenue B full authorization	removed pre condition of unauthorized vehicle
	CCOIv2-REQ-296272/B-UserPrompt_Rq correlationID	kfent1: added clarification of correlation ID in UserPrompt_Rsp
	CCOIv2-REQ-306742/C-Triggering Avenue A prompt	bhamach3: Clarification for Avenue A triggers added
	CCOIv2-SD-REQ-321293/B-Offboard triggerd User Prompt	kfent1: updated GetEntitySettingsAndBlacklist
	CCOIv2-SD-REQ-321294/B-Avenue A partial activation	kfent1: updated GetEntitySettingsAndBlacklist
	CCOIv2-SD-REQ-321295/B-Avenue B full authorization	kfent1: updated GetEntitySettingsAndBlacklist,made CCSUpdateAlert optional since it is not 100% sure that a entity changes (Fleet scenarios).
	CCOIv2-FUN-REQ-291418/B-Synchronize OnBoard and OffBoard System	kfent1: removed CCOIv2-REQ-296301/A-Check of Meta Data when executing FTCP Command

CCOIv2-UC-REQ-318886/C-CCSManager triggers OffBoardSynchronization	kfent1: remved change of active Policy table in Scenario Description
504766/B-Requirements	
CCOIv2-REQ-296296/B-Check of Meta Data	removed CCOIv2-REQ-296301/A-Check of Meta Data when executing FTCP Command
CCOIv2-CLD-REQ-296324/B-ServerData	bhamach3: SCF added as part of ServerData
CCOIv2-REQ-296343/B-FTCP Periodic Query Policy Governed Function	kfent1: removed CCOIv2-REQ-296352/A-OffBoard Synchronization FTCP Query Trigger Upon New Policy Table Selection
CCOIv2-STM-REQ-296345/C-FTCP Query Function	kfent1: removed the Query OFF path since it is not reachable.
CCOIv2-REQ-296338/C-OffBoard Synchronization FTCP Update	bhamach3: SCF reference added
CCOIv2-SD-REQ-321883/B-OffBoardPolicyClient triggers OffBoardSynchronization	kfent1: removed "change entities per Dependencies"
CCOIv2-SD-REQ-321884/B-CCSManager triggers OffBoardSynchronization	kfent1: removed "change entities per Dependencies"
CCOIv2-UC-REQ-291421/B-Change entity setting by User	kfent1: removed "in CCS menu" since change could be done somewhere else (FordPass , Confirming a PopUp etc.)
CCOIv2-REQ-296398/B-Assigning consentSequenceId and consentTimestamp	bhamach3: Clarification - change of lifecycle mode added as driver for consentsequenceID increment driver
CCOIv2-REQ-313179/C-Default Opt-in entity values	bhamach3: Provisioning as trigger for default settings added
CCOIv2-REQ-318338/C-Default UAllow on Reset	bhamach3: Clarification: Only bUAllow default values changed on reset
CCOIv2-REQ-342774/A-Default on Provisioned state	bhamach3: new requirement
CCOIv2-REQ-296415/C-Effects of Reset	bhamach3: Clarification of default values and settings broadcast
CCOIv2-REQ-296879/C-Entity toggle switch changed to "on"	bhamach3: Clarification of PTE dependencies
CCOIv2-REQ-296880/C-Entity toggle switch changed to "off"	bhamach3: PTE dependencies clarification
CCOIv2-SD-REQ-321292/B-Change entity setting by User	kfent1: update GetEntitySettingsAndBlacklist
CCOIv2-UC-REQ-296189/C-Enforce policies	bhamach3: blacklist reference added
CCOIv2-UC-REQ-328038/B-Feature Input PolicyEnforcement	bhamach3: blacklist/SCF reference added
CCOIv2-UC-REQ-313323/C-Meta Input PolicyEnforcement	kfent1: aligned wording with CCOIv2-UC-REQ-328038/B-Feature Input PolicyEnforcement
504786/C-Requirements	bhamach3: REQ-326670 removed - combined with REQ-326671 as generic policy enforcement logic kfent1: added CCOIv2-REQ-343058/A-Policy Enforcer has to Acknowledge Blacklist
CCOIv2-REQ-326670/B-blacklist generation	bhamach3: requirement name revised, blacklist logic added
CCOIv2-REQ-326671/B-input policy enforcement per blacklist	bhamach3: requirement name revised, policy enforcer logic changed
CCOIv2-REQ-324869/B-Policy Enforcement disabled in un-provisioned state	bhamach3: Reference to Provisioning API
CCOIv2-REQ-328100/B-Validation of Policy Enforcement	kfnet1: removed unnecessary Validation items
CCOIv2-REQ-343058/A-Policy Enforcer has to Acknowledge Blacklist	kfent1: new requirement
CCOIv2-REQ-311523/B-Policy Table Meta Data	kfent1: renamed to Policy Table Meta Data, removed 543897/A-Use Cases; removed: CCOIv2-REQ-312329/A-Policy Table Selection
543898/B-Requirements	
CCOIv2-REQ-311522/C-Default Policy Tables	bhamach3: SCF reference added; kfent1: removed language dependency
CCOIv2-REQ-296313/C-Meta Data	bhamach3: REVISION NOT REQUIRED
CCOIv2-TBL-504768/C-Meta Data Description Table	bhamach3: SCF reference added. Hash calculation clarified
CCOIv2-REQ-296319/C-Platform Version	bhamach3: SCF reference added
496258/C-Requirements	bhamach3: REQ-328987 removed (Feature Manifest logic descoped)

	CCOIv2-REQ-296414/C-Policy Tables	bhamach3: SCF description added
	CCOIv2-REQ-296305/C-Configuration and Preload	bhamach3: SCF reference added
	REQ-328988/B-Manual Policy Upload	bhamach3: SCF reference added, Feature Manifest removed
	584657/B-General explanations	bhamach3: Feature Manifest reference removed
	584671/B-CCSEntityDefinitions	bhamach3: REQ-329006 removed - any default settings to be taken from PTE
	CCOIv2-REQ-329007/B-dependencies	bhamach3: PTE dependency clairification
	CCOIv2-REQ-328949/B-messageCode (User Friendly Messages)	kfent1: clarified that screenID is used to match the nessage code
	CCOIv2-REQ-329018/B-infoText_unsubscribed_locked	bhamach3: correction
	617509/A-Service Config File content definition	bhamach3: Content definition of new Service Config File
	CCOIv2-REQ-342767/A-CCSEntity	bhamach3: new requirement
	CCOIv2-REQ-342768/A-Signal	bhamach3: new requirement
	CCOIv2-REQ-342769/A-Primitive	bhamach3: new requirement
	CCOIv2-REQ-342770/A-Application	bhamach3: new requirement
	CCOIv2-REQ-342771/A-CCSBlacklist	bhamach3: new requirement
	CCOIv2-UC-REQ-296180/B-show data sharing reminder	kfent1: wording changed from "him" to "the user"
	CCOIv2-UC-REQ-296181/B-show data sharing reminder Pop-Up	kfent1: removed "BT and USB" since phones can be paired by different means
	CCOI-REQ-303277/B-Data/Location sharing reminder Pop-Up	kfent1: clarified that data sharing Pop-Up shall not be shown again when any Pop-Up was shown before to the currently paired phone
	CCOIv2-REQ-296376/C-Diagnostics Parameters for Entity Settings	bhamach3: clarification - instead of DET or dealer tools, read out via internal developer tools will be sufficient
	CCOIv2-REQ-296379/B-Diagnostic Parameters for Active Policy Table	kfent1: removed CCOIv2-REQ-296380/A-DTC due to missing policy table
	CCOIv2-REQ-296381/C-Diagnostics Parameters for User Prompt Broker	bhamach3: clarification - instead of DET or dealer tools, read out via internal developer tools will be sufficient
	STR-506066/C-Appendix: Reference Documents	kfent1: SCF file reference
September 5, 2019	1.3	**Updated Release**	
	CCOIv2-FRD-REQ-362363/A-Customer Connectivity Settings Client APIM SPSS	bhamach3: Content revised for Release 1.3, Manager split in Server and Client SPSS, Sections "General Requirements" and "Diagnostic Requirements" removed
	CCOIv2-TBL-683964/A-Glossary	bhamach3: Revised from CCOI to CCOIv2, "Active Policy Table" added; mkahlen: added new terms: factory, armr admin, CCSOffBoardPolicyClient, CCSOnboardPolicyClient, CCSOnBoardPolicyModemClient, CCSOnBoardPolicyServer
	CCOIv2-TBL-683966/A-Abbreviations	bhamach3: Revised from CCOI to CCOIv2, SCF added, FM (Feature Manifest) removed; mkahlen: added new abbreviations: GUI, SOA, FCI, FOTA, MMOTA
	CCOIv2-STR-685360/A-Architectural Design	mkahlen: replaced REQ-313614 API requirement with SOA interface
	685846/A-Boundary Diagram	bhamach3: boundary diagram added for system overview
	CCOIv2-BD-REQ-362932/A-Customer Connectivity Settings	bhamach3: boundary giagram added for system overview
	CCOIv2-685361/A-Interface Requirements	mkahlen: new paragraph for interfaces
	CCOIv2-685364/A-SOA Interface	mkahlen: new paragraph for soa interface
	CCOIv2-REQ-362874/A-ECG SOA Proto File	mkahlen: new requirement for the ecg soa proto file messages
	CCOIv2-REQ-362875/A-SYNC SOA Proto File	mkahlen: new requirement for the sync soa proto file messages
	CCOIv2-REQ-362876/A-FNV SOA Proto File	mkahlen: new requirement for the fnv soa proto file messages
	STR-683200/A-Functional Definition	bhamach3: Chapters removed: CCOIv2-FUN-REQ-324120, CCOIv2-FUN-REQ-291418; Generic Policy Enforcer section replaced by Client specific Policy Enforcer section
	CCOIv2-FUN-REQ-362533/A-User Prompt and Modem activation (Client)	bhamach3: User Prompt logic split for CCS Server and Client
	504763/C-Use Cases	mkahlen: Combined UC-REQ-296266, UC-REQ-313014, UC-REQ-317846, UC-REQ-296267, UC-REQ-296268, UC-REQ-313033 in a single use case UC-REQ-355216.

	CCOIv2-UC-REQ-355216/A-Prompt User to Get Driver's Consent	mkahlen: initial release
	683549/A-Requirements	bhamach3: Requirement REQ-296291 removed.
	CCOIv2-REQ-362705/A-Fail User Prompt when screenID or promptType Unknown	mkahlen: new requirement that the client shold fail requests with unkown message codes or text
	CCOIv2-REQ-296287/B-User Prompt Handling as per PTE and UFM	mkahlen: included error scenario handling before showing user prompt on client
	CCOIv2-REQ-318320/C-User Prompt Handling promptType Initial Prompt	mkahlen: included the specific message parameters
	CCOIv2-REQ-318321/B-User Prompt Handling promptType Error	mkahlen: included the specific message parameters
	CCOIv2-REQ-318322/C-User Prompt Handling promptType Information	bhamach3: HMI reference corrected; mkahlen: included the specific message parameters
	CCOIv2-REQ-362706/A-Events Impacting User Prompts	mkahlen: new requirement paragraph
	CCOIv2-REQ-362707/A-Effects of Driver Selecting Yes	mkahlen: new requiremnet describing what the client should do if a user clicks yes on a prompt
	CCOIv2-REQ-362708/A-Effects of Driver Selecting No	mkahlen: new requirement describing what the client should do if the user selects no on a user prompt
	CCOIv2-REQ-362709/A-Effects of Driver Selecting Ask Me Later	mkahlen: new requirement describing what the client should do if the driver clicks ask me later on a user prompt
	CCOIv2-REQ-362710/A-Effects of Driver Selecting Close	mkahlen: new requirement describing what the client should do if the driver clicks close on a user prompt
	CCOIv2-REQ-362711/A-Effects of Driver turning Ignition Off without Making Choice	mkahlen: new requirement describing what the client should do if the driver turns ignition off without making a choice
	CCOIv2-REQ-362712/A-Effect of Master Reset	mkahlen: new requirement describing client beheavior for master and brand reset connect.
	CCOIv2-REQ-296283/B-Effect of PTE or UFM Update	mkalen: clarified that the client only needs to close the user prompt in case of a new pte or ufm file. The server will further process the command.
	CCOIv2-REQ-362714/A-Effect of Data Storage Error	mkahlen: separated this requirement about data storage error behavior out from REQ-296283
	CCOIv2-REQ-362715/A-Performance Requirements	mkahlen: new requirement paragraph
	CCOIv2-REQ-362716/A-Time to Display User Prompts	mkahlen: new performance requiremnet how long it should take to display a popup after receiving the trigger condition from the server
	CCOIv2-REQ-362718/A-Time to Display User Prompts: Happy Path	mkahlen: new performance requirement for the happy path of REQ-362716
	CCOIv2-REQ-362719/A-Time to Display User Prompts: Higher Priority Pop-ups Present	mkahlen: new performance requirement when higher priority pop-ups are present of REQ-362716
	CCOIv2-REQ-362717/A-Maximum Length of Variable Text	mkahlen: new performance requirement about the minimum text length that the client should be able to display as variable text
	562210/B-Sequence Diagrams	mkahlen: removed SD-REQ-321293, SD-REQ-321294, SD-REQ-321295 and replaced them with SD-REQ-362645, SD-REQ-362646, SD-REQ-362647, and SD-REQ-362648. Instead of focusing on instances we focus on the flow.
	CCOIv2-SD-REQ-362645/A-Prompt Server To get Drivers Consent	mkahlen: new SD to describe the triggers for user prompts
	CCOIv2-SD-REQ-362646/A-Prompt Client To get Drivers Consent	mkahlen: new SD to describe the retry strategy to show user prompts
	CCOIv2-SD-REQ-362647/A-Initial Prompt	mkahlen: new SD to describe an initial prompt flow
	CCOIv2-SD-REQ-362648/A-Information and Error Prompt	mkahlen: new SD to describe an information/error prompt flow
	CCOIv2-FUN-REQ-317862/C-Error and local update prompt handling	mkahlen: added REQ-362597-HMI Lockout
	555154/C-Requirements	mkahlen: Removed requirement REQ-317868. The requirement about pop-up priority is already covered by the HMI spec. Removed requirement REQ-317869. The requirement about closing pop-ups when a higher priority pop-up is shown is already covered by the HMI spec.
	CCOIv2-REQ-317863/C-Error Pop-Up "Feature Unavailable"	mkahlen: Clarified that the actor to show Error Messages Pop-up 27 in the case of DataStorageError or UnrecoverableSnychronizationError is the CCSOnboardPolicyClient.
	CCOIv2-REQ-317866/C-Local Update Pop-Up	mkahlen: Changed the trigger condition to display the local update pop-up.

CCOIv2-REQ-362636/A-Performance Requirements	mkahlen: new requirement paragraph
CCOIv2-REQ-362637/A-Deadline to Inform Server about Setting Changes	mkahlen: new requirement about how long it should take between changing a setting and informing the user
CCOIv2-REQ-355042/A-OnBoardSynchronization (Client)	bhamach3: initial release
CCOIv2-UC-REQ-357523/A-Turn ignition on	bhamach3: initial release
CCOIv2-UC-REQ-362912/A-Turn HMI System on	bhamach3: initial release
CCOIv2-UC-REQ-362282/A-Policy File received from OffBoardPolicyClient	bhamach3: initial release
CCOIv2-UC-REQ-357522/A-Revert to Default Policy File	bhamach3: initial release
CCOIv2-UC-REQ-357525/A-Software Update	bhamach3: initial release
CCOIv2-UC-REQ-362319/A-Setting Change while OnBoardSynchronization	bhamach3: initial release
CCOIv2-UC-REQ-362320/A-Subscription Change while OnBoardSynchronization	bhamach3: initial release
CCOIv2-UC-REQ-362321/A-Authorization Change while OnBoardSynchronization	bhamach3: initial release
CCOIv2-UC-REQ-362336/A-User/Authorization Prompt while OnBoardSynchronization	bhamach3: initial release
CCOIv2-REQ-354018/A-OnBoardHMISystemPolicyClient Synchronization State Transitions	bhamach3: initial release
CCOIv2-TBL-664710/A-State Transition Table	bhamach3: FB5 state transitions
CCOIv2-REQ-362524/A-Invalid to Waiting	bhamach3: initial release
CCOIv2-REQ-362525/A-Any to Invalid	bhamach3: initial release
CCOIv2-REQ-359108/A-Client Hash Check in State Synchronizing	bhamach3: initial release
CCOIv2-REQ-358309/A-Hash Value mismatch	bhamach3: initial release
CCOIv2-REQ-358466/A-Hash Value match	bhamach3: initial release
CCOIv2-REQ-359109/A-SynchronizationSessionRequest	bhamach3: initial release
CCOIv2-REQ-362526/A-Application of synchronized Policy Files	bhamach3: initial release
CCOIv2-ACT-REQ-362528/A-OnBoardSynchronization	bhamach3: initial release
CCOIv2-STM-REQ-358305/A-OnBoardSynchronization	bhamach3: initial release
CCOIv2-SD-REQ-358303/A-Power On Sequence	bhamach3: initial release
CCOIv2-SD-REQ-361331/A-SynchronizationNeeded	bhamach3: initial release
CCOIv2-SD-REQ-358304/A-Synchronization	bhamach3: initial release
CCOIv2-SD-REQ-361332/A-SynchronizationFailed	bhamach3: initial release
CCOIv2-FUN-REQ-362638/A-Update Entity Setting (Client)	mkahlen: renamed the section from change entity setting to update entity setting. The whole section was revised for the Client/Server split.
492616/B-Use Cases	mkahlen: replaced use cases to change entity settings (REQ-291421/B-Change entity setting by User; REQ-291529/A-Change entity setting per policy file) with more detailed use cases
CCOIv2-UCD-REQ-361932/A-Update Entity Settings	mkahlen: new use case diagram
CCOIv2-UC-REQ-355218/A-Change Consent Setting in Menu	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355186/A-Configure CCS Communication Data	mkahlen: new use case for clarification

CCOIv2-UC-REQ-355202/A-Configure Entity bSAllow	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355203/A-Configure Entity bPAllow	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355208/A-Reset	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355201/A-Provisioning	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355204/A-Change Lifecycle Mode	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355206/A-ECG Swap	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355212/A-Restore bUAllow Entity Settings	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355214/A-Update SCF	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355205/A-Hard Reset	mkahlen: new use case for clarification
CCOIv2-UC-REQ-362905/A-Update Software	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355215/A-Re-connect Battery	mkahlen: new use case for clarification
CCOIv2-UC-REQ-355983/A-Update Settings Onboard	mkahlen: new use case for clarification
684020/A-Requirements	mkahlen: new requirement section for client on update entity settings due to server client split
CCOIv2-REQ-362811/A-Driver Changes a Setting in Menu	mkahlen: new requirement paragraph
CCOIv2-REQ-296879/D-Entity toggle switch changed to "on"	mkahlen: Updated the requirement so that not the client applies the entity setting for enabling but sends the request to change an entity setting to the server. Also removed a link to the dependencies as dependencies apply to all entity setting changes not just bUAllows.
CCOIv2-REQ-296880/D-Entity toggle switch changed to "off"	mkahlen: Updated the requirement so that not the client applies the entity setting for disabling but sends the request to change an entity setting to the server. Also removed a link to the dependencies as dependencies apply to all entity setting changes not just bUAllows.
CCOIv2-REQ-296881/B-Switching entites on/off no consent prompt required per PTE	mkahlen: Updated the requirement so that not the client applies the entity setting without user prompt but sends the request to change an entity setting to the server.
CCOIv2-REQ-362639/A-Client Sends Read Entity Setting Request on Start-up	mkahlen: new requirement that the client shall ready ccs settings on start up
CCOIv2-REQ-362640/A-Store Server Entity Settings on Client: Client Starts-up	mkahlen: new requriement for the client to store settings from a reads request response
CCOIv2-REQ-362641/A-Store Server Entity Settings on Client: Server updated A CCS Entity	mkahlen: new requirement, Inform Server about storing the latest setting update. All CCS clients should store the CCS settings locally to be able to answer setting read requests from applications on the client's module.
CCOIv2-REQ-362817/A-Inform Features about Entity Setting Changes	mkahlen: new requirement that elaborates on the CCS api to inform features about ccs settings
CCOIv2-REQ-362818/A-Provide Entity Settings Information on Request	mkahlen: new requirement that elaborates on the CCS api to inform features about ccs settings
492618/C-Sequence Diagrams	mkahlen: expanded seuqence diagrams with more details
CCOIv2-SD-REQ-362625/A-Provisioning	mkahlen: new SD illustrating the provisioning scenario
CCOIv2-SD-REQ-321292/C-Change Consent Setting in Menu	mkahlen: included more details about a user changing a setting
CCOIv2-SD-REQ-362624/A-bPALlow or bSAllow Configuration Change	mkahlen: new SD that shows the bSALlow and bPAllow configuration change impact on CCS
CCOIv2-SD-REQ-362626/A-ECG Swap	mkahlen: new SD illustrating the ECG swap scenario
CCOIv2-SD-REQ-362627/A-Update Settings Onboard	mkahlen: new SD to document how the server shall update the settings on change
CCOIv2-SD-REQ-362628/A-Distribute Entity Settings	mkahlen: new SD to document how the server informs onboard clients about setting changes
CCOIv2-FUN-REQ-362747/A-Policy Enforcement (Client)	bhamach3: initial release
CCOI-504600/C-Use Cases	bhamach3: reduced to one generic use case
CCOIv2-UC-REQ-296189/D-Enforce policies	bhamach3: Use Case revised to cover behavior on all policy enforcing modules

CCOIv2-684929/A-Requirements	bhamach3: section updated; mkahlen: the whole policy enforcement for SYNC is tracked in SYNC-41274
CCOIv2-REQ-362753/A-Connected Navigation	mkahlen: New requirement on the policy enforcement for navigation per SYNC-18616
REQ-362948/A-Connected Navigation - Restricted Data	mkahlen: new requirement for restricted data access for connected nav
CCOIv2-REQ-362754/A-Connected Voice (Nuance)	mkahlen: New requirement on the policy enforcement for connected voice per SYNC-39955
CCOIv2-REQ-362757/A-Connected Voice (Nuance) - Nuance Setting	mkahlen: New sub-requirement on the policy enforcement for connected voice per SYNC-39955
CCOIv2-REQ-362758/A-Connected Voice (Nuance) - Location Sharing Setting	mkahlen: New sub-requirement on the policy enforcement for connected voice per SYNC-39955
CCOIv2-REQ-362760/A-Connected Voice (Nuance) - Driving Data Setting	mkahlen: New sub-requirement on the policy enforcement for connected voice per SYNC-39955
CCOIv2-REQ-362761/A-Connected Voice (Nuance) - Vehicle Data Setting	mkahlen: New sub-requirement on the policy enforcement for connected voice per SYNC-39955
CCOIv2-REQ-362762/A-Connected Voice (Nuance) - Contact Upload Setting	mkahlen: New sub-requirement on the policy enforcement for connected voice per SYNC-39955
CCOIv2-REQ-362764/A-Connected Voice (Nuance) - Restricted Data	mkahlen: New sub-requirement on the policy enforcement for connected voice per SYNC-39955
CCOIv2-REQ-362765/A-Analytics	mkahlen: New requirement on the policy enforcement for analytics per ANLYT-3795
CCOIv2-REQ-362766/A-Diagnostics	mkahlen: New sub-requirement on the policy enforcement for analytics per ANLYT-3795
CCOIv2-REQ-362768/A-Vehicle Analytics	mkahlen: New sub-requirement on the policy enforcement for analytics per ANLYT-3795
CCOIv2-REQ-362770/A-Voice Recognition Feedback	mkahlen: New sub-requirement on the policy enforcement for analytics per ANLYT-3795
CCOIv2-REQ-362771/A-Media Analytics	mkahlen: New sub-requirement on the policy enforcement for analytics per ANLYT-3795
CCOIv2-REQ-362776/A-Sirius XM 360L	mkahlen: New requirement on the policy enforcement for Sirius XM per SYNC-58093
REQ-362949/A-Sirius XM 360L - Restricted Data	mkahlen: new requirement for restricted data access for sirius
CCOIv2-REQ-362777/A-Digital Owners Manual	mkahlen: clarification that digital owners manual can stream videos when connectivity is enabled
CCOIv2-REQ-362778/A-Rocket Setup	mkahlen: clarification that rocket set up is allowed to receive settings from offboard when connectivity is enabled
CCOIv2-REQ-362805/A-Mobile Phone Interface Not Affected by CCS Entity Settings	mkahlen: clarification that android auto, apple carplay, applink are not affected by ccs settings (they have their own settings)
CCOIv2-REQ-362779/A-Block All Connections for Not Listed Features	mkahlen: clarified that features not mentioned in this spss should not have access to a backend on SYNC
504597/B-Use Cases	bhamach3: requirement structure corrected
CCOIv2-UC-REQ-296183/B-show CCS settings menu	bhamach3: Synchronization state referenced
CCOIv2-UC-REQ-296184/B-check entity settings	bhamach3: Synchronization state referenced
CCOIv2-REQ-296192/B-Driver Restrictions SPSS dependencies	mkahlen: corrected typo
CCOIv2-FUN-REQ-362370/A-Policy Table Definition (Client)	bhamach3: Client section created
CCOIv2-UC-REQ-296178/B-parse Policy Files	bhamach3: dependency of ignition on removed, System split into Server and Client, new Policy File contents (EnttiyDefinitions, SCF) referenced
683202/A-Requirements	bhamach3: Client requirements split from Server
CCOIv2-REQ-296414/D-Policy Tables	mkahlen: replaced backend with offboardclient (to be more specific)
CCOIv2-REQ-362371/A-Persistent Storage and Hashing	bhamach3: Client Consistency Check defined
CCOIv2-REQ-362372/A-Failed Client Consistency Check	bhamach3: Client Consistency Check defined
CCOIv2-REQ-296368/C-User Friendly Messages variables	bhamach3: REQ references corrected; mkahlen: updated that the sText variables come from the Server message user prompt, not FTCP

CCOIv2-REQ-318822/C-unique identifier	bhamach3: PTE parameter changed from FNV2FID to FeatureCode; mkahlen: repalced backend with CCSOffBoardPolicyClient to be more specific.
CCOIv2-REQ-318823/C-regions	bhamach3: references updated
CCOIv2-REQ-329003/B-header	bhamach3: feature manifest logic descoped for J#1, instead using this requirement for general Policy File header information
584671/C-CCSEntityDefinitions	mkahlen: added new requirement in this section REQ-362720
CCOIv2-REQ-329004/B-DefaultEntitySettingPolicies	mkahlen: default settings no longer depend on conditions of other entity states
CCOIv2-REQ-329007/C-dependencies	mkahlen: Clarification: due dependencies only being applied if an entity setting settings are not changed due to a reset to default values or due to restoring values, this requirement had to be adjusted to include a reference to REQ-296883/A-Dependency on Policy Table Extension.
CCOIv2-REQ-362720/A-Dependency Execution	mkahlen: New requirement that documents how the code has implemented the execution of dependencies and which dependencies are executed first. If we need to add conflicting dependencies in the future, we are aware of which dependency takes precedence.
CCOIv2-REQ-328921/B-promptPolicies	mkahlen: updated the actor to apply prompt policies
CCOIv2-REQ-328925/B-userActions	mkahlen: updated this requirement for the client server split that user actions are interpreted depending on the clients response
CCOIv2-REQ-328939/B-iconRules	bhamach3: requirement text correct, to match revised strategy (icon reference in PTE instead of CFM)
584644/B-User Friendly Messages content definition	bhamach3: header requirement added
CCOIv2-REQ-362575/A-header	bhamach3: Policy File header information added
CCOIv2-REQ-328953/B-initalPrompt	mkahlen: added the mapping between initial prompt and the received parameter from the server
CCOIv2-REQ-328962/B-menu	bhamach3: icon reference removed, as covered by PTE logic
CCOIv2-REQ-328975/B-error	mkahlen: added the mapping between error prompt and the received parameter from the server
CCOIv2-REQ-329020/B-information	mkahlen: added the mapping between information prompt and the received parameter from the server
CCOIv2-FUN-REQ-296179/B-Notification of data and location sharing	bhamach3: Data/Location section replaced - FB4 requirement IDs removed
504595/B-Use Cases	hzubert: added some use cases
CCOIv2-UC-REQ-296180/C-show data sharing reminder	hzubert: description in more details
CCOIv2-UC-REQ-296181/C-show data sharing reminder Pop-Up+	kfent1: clarified post condition
CCOIv2-UC-REQ-296181/D-show data sharing reminder Pop-Up	bhamach3: CCS Client specifically referenced as actor
684019/A-Requirements	kfent1: transferred data/location sharing reminder logic from HMI Specification to SPSS (CCOIv2-FUN-REQ-296179/A-Notification of data and location sharing)
CCOIv2-REQ-362633/A-Data/Location sharing reminder	bhamach3: Requirement correction - "no sharing" was introduced with FB5. iconRules REQ number corrected.
CCOIv2-REQ-362913/A-Data/Location sharing reminder in error state	hzubert: initial release
CCOIv2-REQ-362914/A-Maintaining an acknowledged device list	hzubert: initial release
CCOIv2-REQ-362915/A-Definition of acknowledged devices	hzubert: initial release
CCOIv2-REQ-362916/A-Definition of devices	hzubert: initial release
CCOIv2-REQ-362917/A-USB devices which can get flagged as an acknowledged device	hzubert: initial release
CCOIv2-REQ-362918/A-USB devices cannot get flagged as an acknowledged device	hzubert: initial release
CCOIv2-REQ-362919/A-Waiting for Bluetooth and USB initialization on triggering Data Location Sharing reminder	hzubert: initial release
CCOIv2-REQ-362920/A-Do not save devices when screen is deactivated	hzubert: initial release

CCOIv2-REQ-362921/A-Do not show data/location sharing reminder if acknowledged device is connected	hzubert: initial release
CCOIv2-REQ-362922/A-Remove acknowledged devices from list on Reset	hzubert: initial release
CCOIv2-TMR-REQ-362923/A-CCOI_MaxBTDeviceSearchTimeout	hzubert: initial release
CCOIv2-TMR-REQ-362924/A-CCOI_DataSharingPopUpTimeout	hzubert: initial release
CCOIv2-ACT-REQ-362930/A-User identification via paired/connected device for data sharing reminder Pop-Up	hzubert: initial release
CCOIv2-STR-506066/D-Appendix: Reference Documents	mkahlen: added soa, ftcp, gcf reference

Table of Contents

1 Terms and Definitions

Term	Definition
Backend	Cloud module communicating with the vehicle
CCSOffBoardPolicyClient	The ARMR/APCA cloud component that communicates with the vehicle, which hosts the CCS entity settings, PTE, SCF, and UFM files and user prompt logic on the cloud.
Connected Feature	Any feature/application/service which utilizes the connection to any offboard environment including Ford Backend and 3rd party services
Data Element	Atomic unit of data managed by customer opt-in.
Factory	The place where the vehicle is produced and configured. Also referred to as plant
Feature	*Functions* working as a distributed system to provide meaningful functionality to users.
Function	*Functions* are logical entities exchanging and processing data elements.
- *On-Board* Function	*Function* deployed onto a specific *vehicle module*.
- *Off-Board* Function	*Function* deployed onto a specific off-board system, i.e. hardware not part of the vehicle product.
HMI System	*In-Vehicle System* providing Human Machine Interface (HMI) for viewing and controlling connectivity settings. Assumption on FNV2 system: SYNC4 is only available HMI system.
In-Vehicle System	Consists of the portion of the CCS System running on vehicle modules and vehicle communication systems.
− *CCSOnBoardPolicyServer*	Portion of the CCS In-Vehicle System running on the Enhanced Central Gateway Vehicle Module.
− *CCSOnBoardPolicyClient*	Portion of the CCS In-Vehicle System running on the SYNC Vehicle Module.
− *CCSOnBoardPolicyModemClient*	Portion of the CCS In-Vehicle System running on the TCU Vehicle Module.
Opt-In Status	State of a *policy governed entity*, whether it is allowed for transmission or if it is not allowed for transmission of a particular category of data.
Policy Enforcer	CCS component applying the blacklist received from CCS OnBoardPolicyServer
Policy-Governed Entity	*Data Element, Function, Feature, or Meta* which is managed by customer opt-in.
Portal	An interface via which changes to *Opt-In Status* can be made. Examples would be: − The HMI System − An App
User	Human being interacting with the HMI system.
− *Driver*	User who is driving the vehicle. May or may not be a registered user.
− *Registered User*	User has registered a personal account with Ford.
− *Authorized User*	Registered user who authorized association with a vehicle through the vehicle's HMI system.

| Term	Definition
− *ARMR Admin*	A user with admin privileges for the CCS ARMR backend to upload new CCS policy files to the CCSOffBoardPolicyClient.
Vehicle Communication Systems	Vehicle Communication Systems are used to exchange data in between vehicle modules. Typical examples are CAN-bus and automotive Ethernet.
Vehicle Module	Piece of hardware capable of running software programs, i.e. processing, transmitting and storing of data, being part of the vehicle product.

Table 1 – Glossary

Abbreviation	Meaning
ALM	Application Lifecycle Manager, framework to securely install, launch, stop, upgrade, and uninstall applications on the ECG
ARMR	Applink Remote Management and Reporting
CCOI	Connectivity Customer Opt-In
CCS	Customer Connectivity Settings (used synonymously with CCOI)
CFM	Customer Friendly Messages (policy table file)
ECG	Enhanced Central Gateway
FCI	Ford Cloud Interface. A component on the ECG and TCU that sends the FTCP messages to the cloud.
FOTA	Firmware Over the Air Update, same MMOTA
FTCP	Ford Telematics Communication Protocol
GUI	Graphical User Interface – the display to show information to the driver in the vehicle
HMI	Human Machine Interface
IVSU	In Vehicle Software Update
MMOTA	Multi-module Over the Air Update, same as FOTA
NGSDN	Next Generation Service Delivery Network
OGC	Office of General Council
PII	Personally Identifiable Information
PTE	Policy Table Extension (policy table file)
RPC	Remote Procedure Call
SCF	Service Config File (policy table file)
SDN	Service Delivery Network
SOA	Service Oriented Architecture and is used to reference the onboard Ethernet communication
TCU	Telematics Control Unit
UFM	User Friendly Messages (policy table file, used synonymously with CFM)
VIM	Vehicle Information Manager – VIM transforms vehicle CAN data received from traditional CAN network of ECUs (upstream) to rich information called primitives for consumption by services/features resident on ECUs connected to advanced Ethernet domain. Likewise, VIM generates CAN signals from primitives to command CAN network of ECUs (downstream)

Table 2 – Abbreviations

2 Architectural Design

2.1 Boundary Diagram

2.1.1 CCOIv2-BD-REQ-362932/A-Customer Connectivity Settings
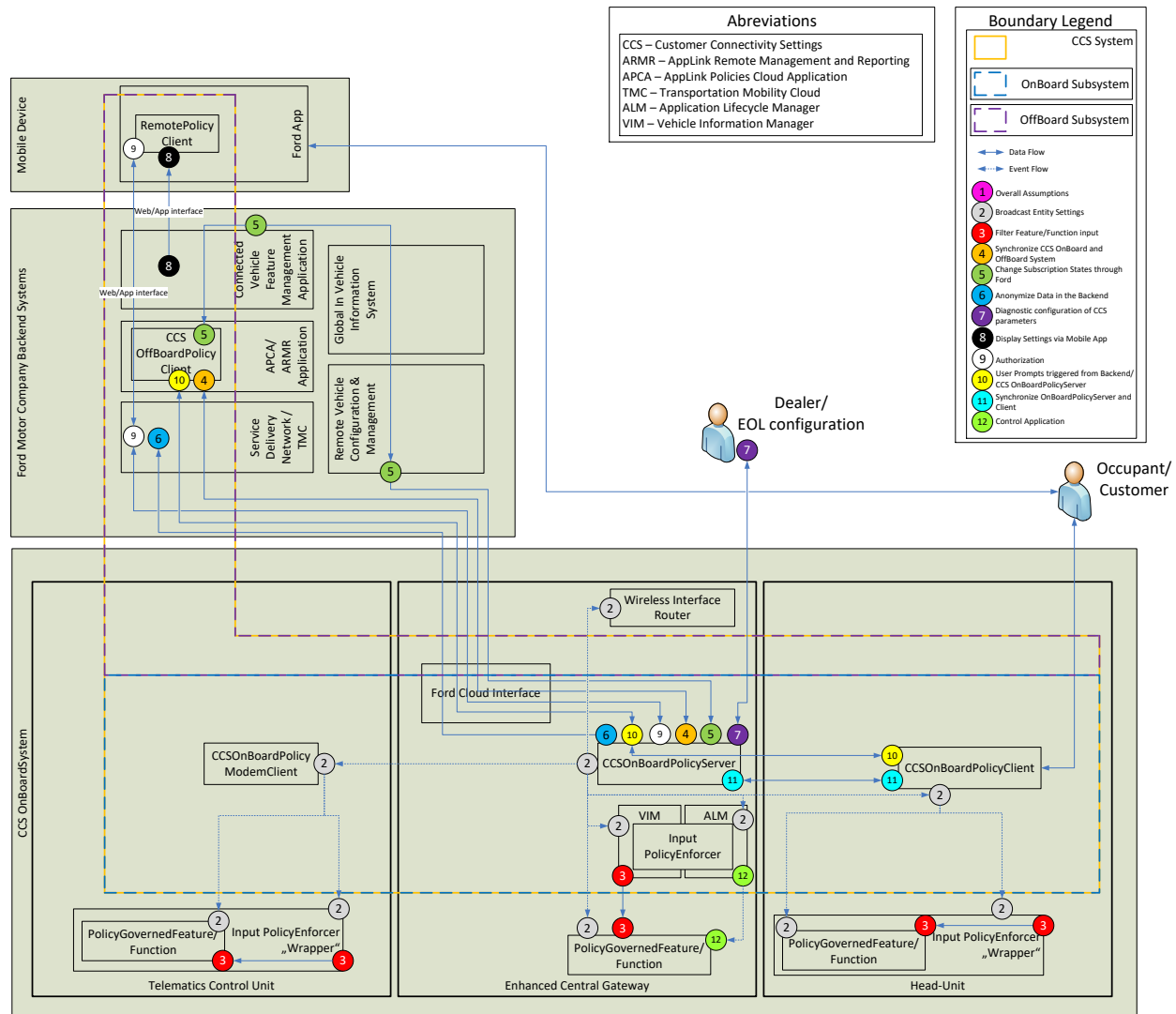
2.2 Interface Requirements

2.2.1 SOA Interface

2.2.1.1 CCOIv2-REQ-362874/A-ECG SOA Proto File

Name	Description
SpcmCcsmEntitySettingsUpdateInd	Protobuf used to publish CCS entity settings to all interested parties
SpcmCcsmEntitySettingsUpdateResp	Protobuf used by CCS client(s) to respond to CCS entity settings update indication
SpcmCcsmBlacklistUpdateInd	Protobuf used to publish CCS blacklist to all interested parties
SpcmCcsmEntitySettingsReadReq	Protobuf used to read CCS entity settings

SpcmCcsmEntitySettingsReadResp	Protobuf used to respond to CCS entity settings read request
SpcmCcsmBlacklistReadReq	Protobuf used to read CCS blacklist
SpcmCcsmBlacklistReadResp	Protobuf used to respond to CCS blacklist read request
SpcmCcsmSynchronizationSessionReq	Protobuf used to request a synchronization session between OnBoardHMISystemPolicyClient and the OnBoardPolicyServer.
SpcmCcsmSynchronizationSessionResp	Protobuf used to update the policy files and entity settings on CCOIOnBoardHMISystemPolicyClient
SpcmCcsmOnBoardPolicyServerStateInd	Protobuf used to inform the CCOIOnBoardHMISystemPolicyClient about the state of the CCOIOnBoardPolicyServer
SpcmCcsmEntityStatus	Message structure holder of individual entity setting and its Allow bits
SpcmCcsmBlacklist	Message structure holder of blacklisted items
SpcmCcsmBlacklistType	Enumeration of different blacklist types

For message details see ECG SOA Proto File.

2.2.1.2   CCOIv2-REQ-362875/A-SYNC SOA Proto File

Name	Description
SpcmCcsmSettingsUpdateInd	Protobuf used to request activation or deactivation of policy governed entities
SpcmCcsmSynchronizationSummaryReportInd	Protobuf used to respond to and at the same time end a synchronization session with a report of the result.
SpcmCcsmUserPromptReq	Protobuf used to request the HMI to display a user prompt
SpcmCcsmUserPromptResp	Protobuf used to provide the response to a prompt request.
SpcmCcsmOnBoardHMISystemPolicyClientStateInd	Protobuf used to inform the CCOIOnBoardPolicyServer about the state of the CCOIOnBoardHMISystemPolicyClient
SpcmCcsmEntityUserAllowStatus	Message structure holder of an entity's UAllow bit change request for SettingsUpdate_Rq
SpcmCcsmClientCommandType	Enumeration of different CCSM client commands

For message details see SYNC SOA Proto File.

2.2.1.3   CCOIv2-REQ-362876/A-FNV SOA Proto File

Name	Description
UTCDateTime	Message structure for capturing UTCDateTime (not from CAN signals). This message structure is used by both Cloud and Vehicle for capturing real timestamp. Cloud shall populate this from System time and vehicle shall populate this from carrier cellular network.
PolicyGovernedCCSFile	Policy Governed CCS File binary for storage in the ECU(ECG/TCU)
PolicyGovernedCCSFileMetaData	Policy Governed CCS File binary for storage in the ECU(ECG/TCU)
Entity	Message structure for Meta/Feature
EntityTypeENUM	Entity Type

CCSDataSynchronizationStateEnum	CCS Data Sychronization States

For message details see FNV SOA Proto File.

3   Functional Definition

3.1   CCOIv2-FUN-REQ-362533/A-User Prompt and Modem activation (Client)

3.1.1   Use Cases

3.1.1.1   CCOIv2-UC-REQ-355216/A-Prompt User to Get Driver's Consent

Actors	CCSOffBoardPolicyClient, Driver, CCSOnBoardPolicyClient, CCSOnBoardPolicyServer
Pre-conditions	Ignition is OFF
Scenario Description	1. CCSOffBoardPolicyClient sends User Prompt Command to CCSOnBoardPolicyServer 2. CCSOnBoardPolicyServer sends User Prompt Command Response to CCSOffBoardPolicyClient 3. Driver turns ignition ON 4. CCSOnBoardPolicyServer triggers the user prompt on the CCSOnBoardPolicyClient 5. CCSOnBoardPolicyClient shows user prompt on vehicle 6. Driver confirms the user prompt 7. CCSOnBoardPolicyClient informs the CCSOnBoardPolicyServer about the driver's choice 8. CCSOnBoardPolicyServer informs the CCSOffBoardPolicyClient about the driver's choice with a correlated user prompt alert
Post-conditions	-

List of Exception Use Cases	E1:
	1b) CCSOffBoardPolicyClient sends User Authorization Command to CCSOnBoardPolicyServer
	   .1 instead of step 2 CCSOnBoardPolicyServer sends User Authorization Command Response to CCSOffBoardPolicyClient
	   .2 proceed with step 3.
	
	E2:
	1c) A trigger condition at the CCSOnBoardPolicyServer is met (REQ-362658) for an onboard-triggered user prompt
	    .1 proceed with step 3
	    .2 skip step 8. of the Scenario Description
	
	E3:
	3a) Ignition is already ON
	    .1 skip step 3. and proceed with step 4.
	
	E4:
	5a) The head unit shows higher prioritized pop-ups
	     .1 CCSOnBoardPolicyClient shows the user prompt after the higher prioritized pop-ups
	    .2 proceed with step 6
	
	E5:
	6a) Driver chooses "Ask me Later" or turns ignition off without making a choice
	    .1 proceed with step 7. of the Scenario Description
	    .2 After step 7. go back to step 3. to retry
	
	E6:
	6b) Driver declines the user prompt
	    .1 proceed with step 7. of the Scenario Description
	
	E7:
	6c) The prompt type is "information" or "error"
	    .1 The driver closes the pop-up
	    .2 continue with step 7. of the Scenario Description

Interfaces	GUI, SOA, FCI

3.1.2   Requirements

3.1.2.1   CCOIv2-REQ-362705/A-Fail User Prompt when screenID or promptType Unknown

When the CCSOnBoardPolicyClient receives a SpcmCcsmUserPromptReq for which the
- the messageCode corresponding to the received "screenId" does not exist in the UFM file (REQ-328949-messageCode (User Friendly Messages))

OR
- the text for that "screenId" and "promptType" combination does not exist (REQ-328953-initalPrompt, REQ-328975-error, REQ-329020-information), OR is empty, OR is NULL in the UFM file (REQ-328983-Missing content strategy)

the CCSOnBoardPolicyClient shall send a correlated SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer as "SPCM_CCSM_PROMPT_RESULT_FAILED".

3.1.2.2   CCOIv2-REQ-296287/B-User Prompt Handling as per PTE and UFM

When the CCSOnBoardPolicyClient receives a SpcmCcsmUserPromptReq
AND
the requirement REQ-362705-Fail User Prompt when screenID or promptType Unknown is not met
AND
requirements from HMI specification H31j are met
the CCSOnBoardPolicyClient shall show a user prompt to the Driver as follows:

3.1.2.2.1   CCOIv2-REQ-318320/C-User Prompt Handling promptType Initial Prompt

If promptType is set to "SPCM_CCSM_PROMPT_TYPE_INITIAL_PROMPT", the CCSOnBoardPolicyClient shall trigger a user prompt with HMI pop-up ID 10 and message content from the CFM file (REQ-328949-messageCode (User Friendly Messages), REQ-328953-initalPrompt).

3.1.2.2.2   CCOIv2-REQ-318321/B-User Prompt Handling promptType Error

If promptType is set to "SPCM_CCSM_PROMPT_TYPE_ERROR", CCSOnBoardPolicyClient shall trigger a user prompt with HMI pop-up ID 27 and message content from the CFM file (REQ-328949-messageCode (User Friendly Messages), REQ-328975-error).

3.1.2.2.3   CCOIv2-REQ-318322/C-User Prompt Handling promptType Information

If promptType is set to "SPCM_CCSM_PROMPT_TYPE_INFORMATION", CCSOnBoardPolicyClient shall trigger a user prompt with HMI pop-up ID 36 and message content from the CFM file (REQ-328949-messageCode (User Friendly Messages), REQ-329020-information).

3.1.2.3   CCOIv2-REQ-362706/A-Events Impacting User Prompts

3.1.2.3.1   CCOIv2-REQ-362707/A-Effects of Driver Selecting Yes

If the user selects "yes" on the user prompt, the CCSOnBoardPolicyClient server shall at the same time:
- close the prompt and send the user's choice via SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer with promptResult = "SPCM_CCSM_PROMPT_RESULT_SELECT_YES"
- trigger a user prompt with HMI pop-up ID 24 and message content from the CFM file (REQ-328949-messageCode (User Friendly Messages), REQ-328960-button1ConfirmationText) if applicable (REQ-328983-Missing content strategy).

3.1.2.3.2   CCOIv2-REQ-362708/A-Effects of Driver Selecting No

If the user selects "no" on the user prompt, the CCSOnBoardPolicyClient server shall close the pop-up.

If there is text available for a confirmation prompt (REQ-328983-Missing content strategy) the CCSOnBoardPolicyClient shall trigger a user prompt with HMI pop-up ID 16 and message content from the CFM file (REQ-328949-messageCode (User Friendly Messages), REQ-328961-button2ConfirmationText).

- If on the driver clicks "ok" on the confirmation prompt, the CCSOnBoardPolicyClient shall send the user's choice via SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer with promptResult = "SPCM_CCSM_PROMPT_RESULT_SELECT_NO".
- If the driver clicks "cancel" on the confirmation prompt, the CCSOnBoardPolicyClient shall go back to pop-up with HMI ID 16 as described above.

If there is no text available for a confirmation prompt (REQ-328983-Missing content strategy) the CCSOnBoardPolicyClient send the user's choice via SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer with promptResult = "SPCM_CCSM_PROMPT_RESULT_SELECT_NO".

3.1.2.3.3   CCOIv2-REQ-362709/A-Effects of Driver Selecting Ask Me Later

If the user selects "ask me later" on the user prompt, the CCSOnBoardPolicyClient server shall close the pop-up and send the user's choice via SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer with promptResult = "SPCM_CCSM_PROMPT_RESULT_SELECT_ASKMELATER".

3.1.2.3.4   CCOIv2-REQ-362710/A-Effects of Driver Selecting Close

If the user selects "closed" on the user prompt, the CCSOnBoardPolicyClient server shall close the prompt and send the user's choice via SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer with promptResult = "SPCM_CCSM_PROMPT_RESULT_DISPLAYED".

3.1.2.3.5   CCOIv2-REQ-362711/A-Effects of Driver turning Ignition Off without Making Choice

If the user turns of ignition without making a choice, the CCSOnBoardPolicyClient server shall close the pop-up.

3.1.2.4   CCOIv2-REQ-362712/A-Effect of Master Reset

If the Driver performs a reset (Master Reset Brand, Connect Reset, or ClearUserSettingsCommand), the CCSOnBoardPolicyClient shall close all pending user prompts and send a SpcmCcsmUserPromptResp with promptResult = "SPCM_CCSM_PROMPT_RESULT_SELECT_NO".

3.1.2.5   CCOIv2-REQ-296283/B-Effect of PTE or UFM Update

If the CCSOnBoardPolicyClient transitions from any state to "Synchronized", the CCSOnBoardPolicyClient shall close all user prompts and shall not send a SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer.

Rationale: if the Client receives an updated policy file with new text it is not clear whether the client will update the text immediately or continue to show the old text. Also, if the text were to be updated immediately, the checks such as "REQ-362705-Fail User Prompt when screenID or promptType Unknown" have not been applied. If the Client does not send a response, the Server will re-trigger the pop-up as usual during the next ignition cycle and it will undergo all checks as usual.

3.1.2.6   CCOIv2-REQ-362714/A-Effect of Data Storage Error

If the CCSOnBoardPolicyClient transitions to the state "DataStorageError", the CCSOnBoardPolicyClient shall close all user prompts and shall not send a SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer.

Rationale: if the Client is in Data Storage it cannot be guaranteed that a response reaches the Server. Therefore, the Server has already canceled all user prompts and informed the backend and the Client just needs to close all pop-ups.

3.1.2.7   CCOIv2-REQ-362715/A-Performance Requirements

3.1.2.7.1   CCOIv2-REQ-362716/A-Time to Display User Prompts

3.1.2.7.1.1   CCOIv2-REQ-362718/A-Time to Display User Prompts: Happy Path

If the CCSOnBoardPolicyClient receives a SpcmCcsmUserPromptReq AND no higher priority pop-up is shown (see HMI requirements) the CCSOnBoardPolicyClient shall show a user prompt within 1 second of receiving the trigger for a user prompt.

3.1.2.7.1.2   CCOIv2-REQ-362719/A-Time to Display User Prompts: Higher Priority Pop-ups Present

If the CCSOnBoardPolicyClient receives a SpcmCcsmUserPromptReq AND higher priority pop-ups are shown (see HMI requirements) the CCSOnBoardPolicyClient shall show a user prompt within 1 second after all higher priority pop-ups were closed.

3.1.2.7.2   CCOIv2-REQ-362717/A-Maximum Length of Variable Text

The CCSOnBoardPolicyClient shall be able to display variable text (REQ-296368-User Friendly Messages variables) of up to 1500 characters.

Rationale: the CCSOffBoardServer can only send up to 1500 characters as variable text in the FTCP messages.
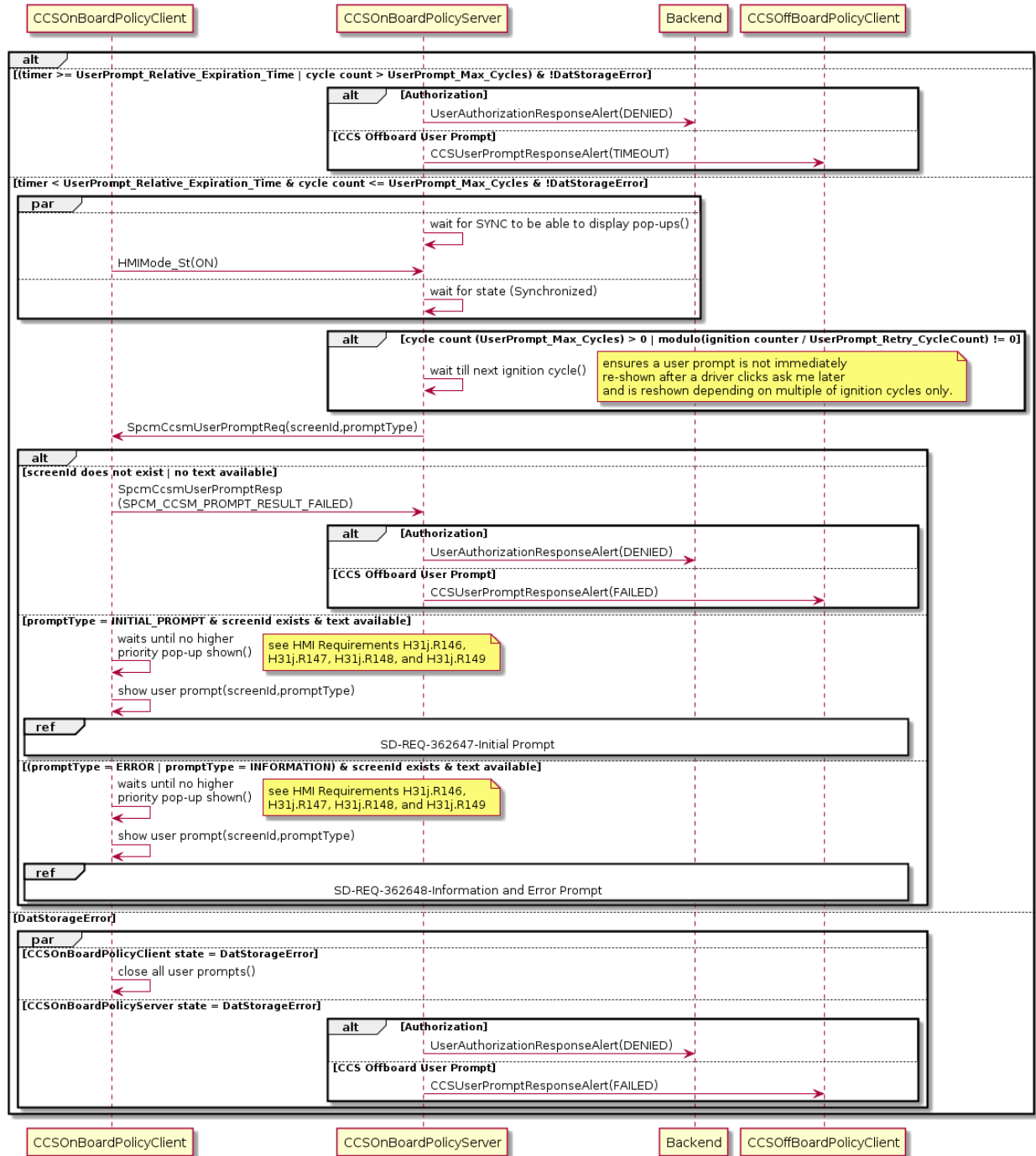
3.1.3   Sequence Diagrams

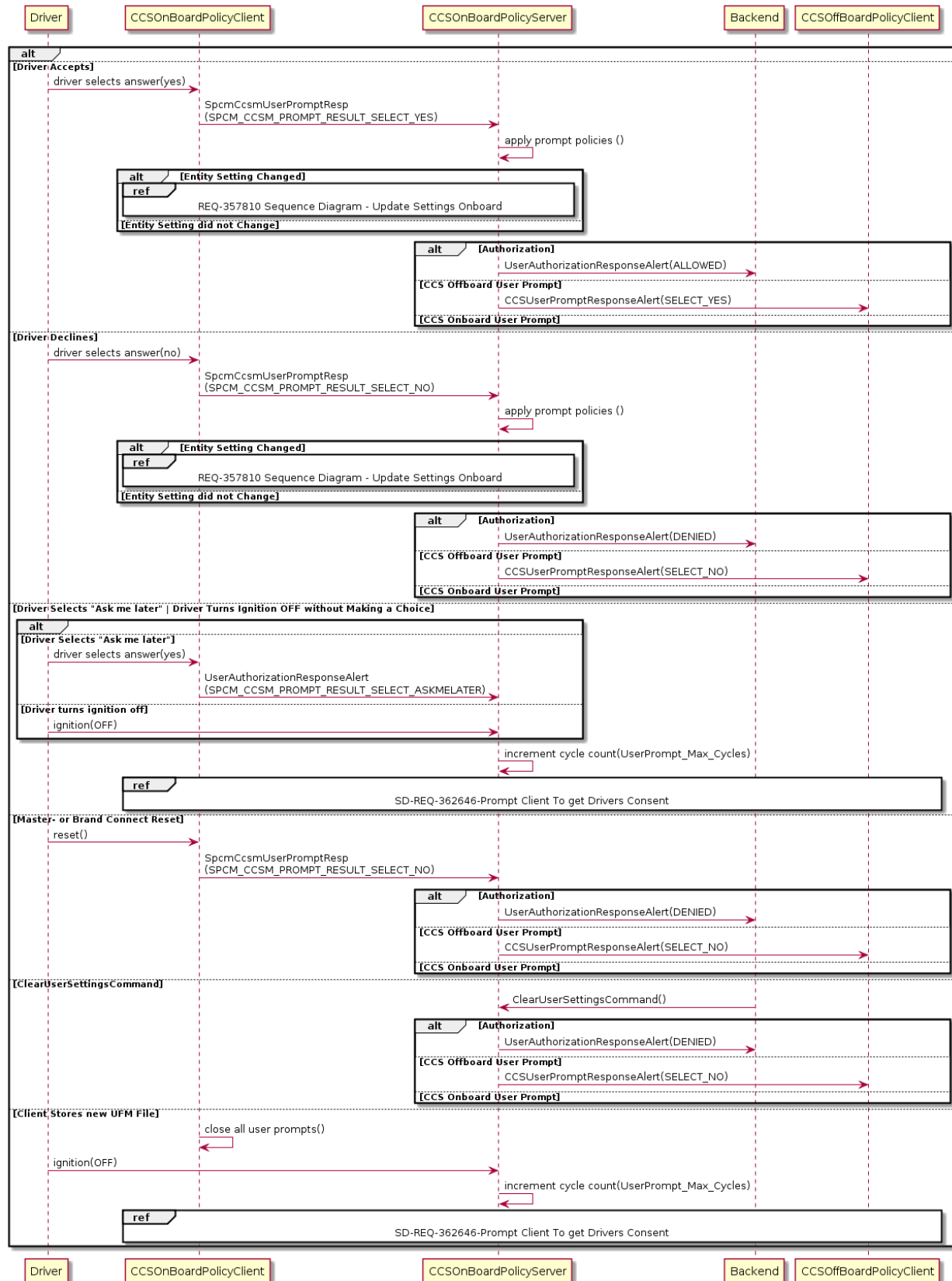### *3.1.3.1   CCOIv2-SD-REQ-362645/A-Prompt Server To get Drivers Consent*
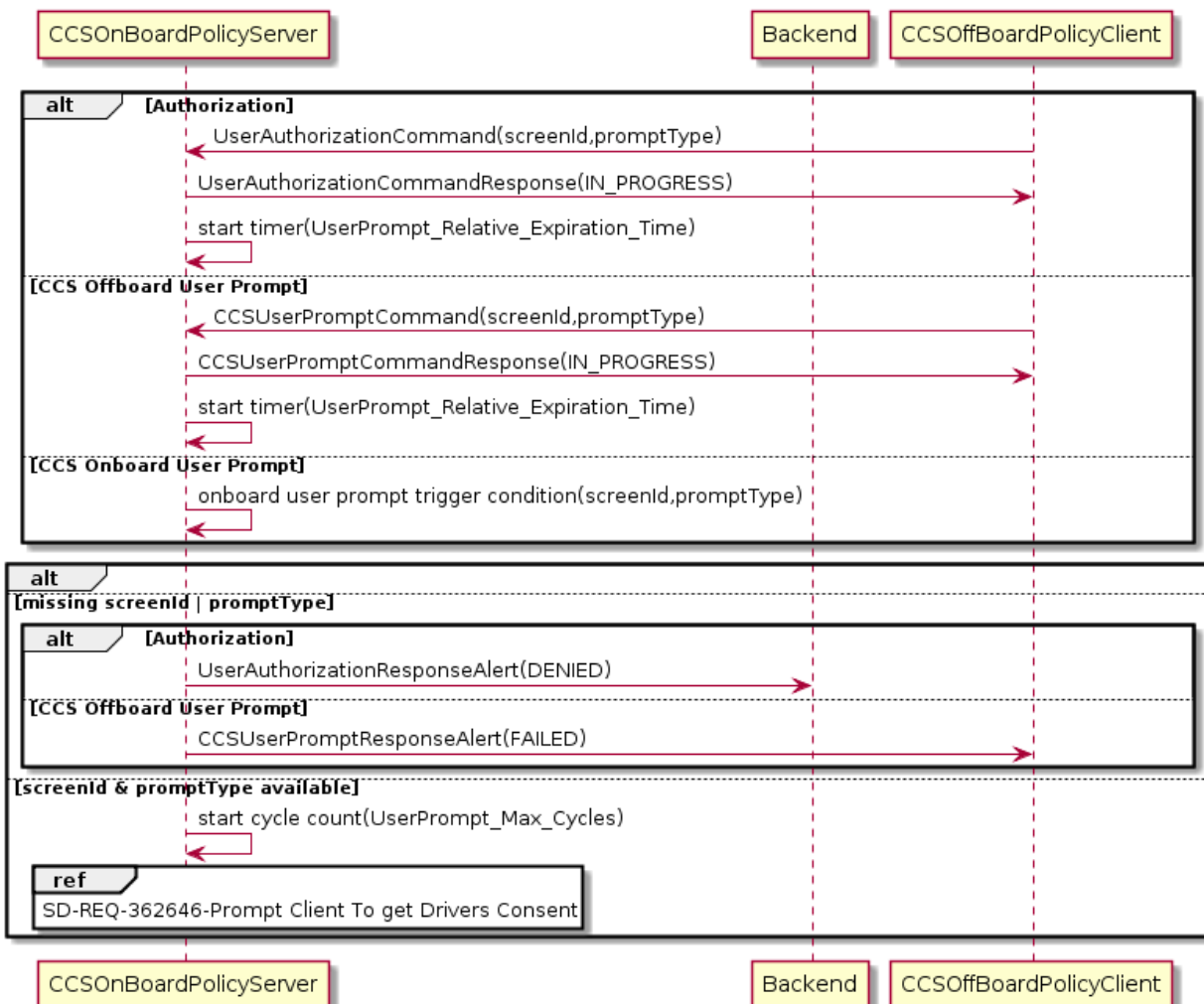
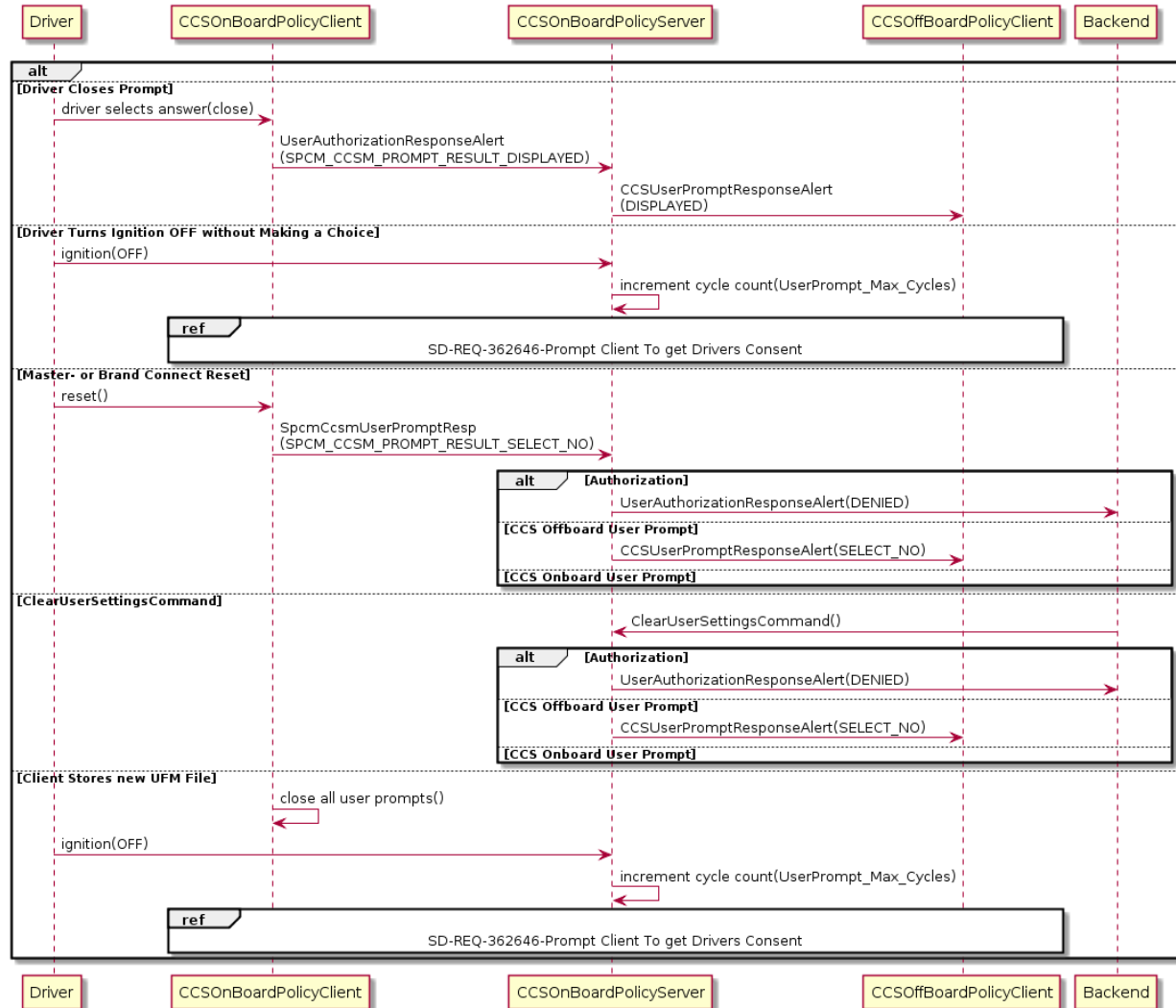## 3.1.3.2 *CCOIv2-SD-REQ-362646/A-Prompt Client To get Drivers Consent*

3.1.3.3 CCOIv2-SD-REQ-362647/A-Initial Prompt

3.1.3.4 CCOIv2-SD-REQ-362648/A-Information and Error Prompt

3.2 CCOIv2-FUN-REQ-317862/C-Error and local update prompt handling

3.2.1 Requirements

3.2.1.1 CCOIv2-REQ-317863/C-Error Pop-Up "Feature Unavailable"
If the following conditions are met

CCSOnboardPolicyClient is in state DataStorageError
AND
(the driver is in the Connected Vehicle Features menu OR the driver is attempting to enter the Connected Vehicle Features menu OR the driver is attempting to change an entity setting)

the CCSOnboardPolicyClient shall display the Error Messages Pop-Up 27 and populate its content with message code 9.

3.2.1.2 CCOIv2-REQ-317866/C-Local Update Pop-Up
If the following conditions are met

(CCSOnboardPolicyClient is not in state DataStorageError and is not in state Synchronized)
AND
(the driver is in the Connected Vehicle Features menu OR the driver is attempting to enter the Connected Vehicle Features menu OR the driver is attempting to change an entity setting)

the CCSOnboardPolicyClient shall display the Local Update Pop-Up 28.

3.2.1.3 CCOIv2-REQ-362636/A-Performance Requirements

3.2.1.3.1 CCOIv2-REQ-362637/A-Deadline to Inform Server about Setting Changes
Once a driver changes an entity setting by clicking the entity setting (REQ-296881-Switching entites on/off no consent prompt required per PTE) and confirming the prompt if applicable (REQ-296879-Entity toggle switch changed to "on", REQ-296880-Entity toggle switch changed to "off") the CCSOnBoardPolicyClient shall show the local update pop-up REQ-317866-Local Update Pop-Up within 250 ms of the change unless the CCSOnBoardPolicyServer already confirmed the updated settings via SpcmCcsmEntitySettingsUpdateInd.

3.3   CCOIv2-REQ-355042/A-OnBoardSynchronization (Client)

3.3.1   Use Cases

3.3.1.1   *CCOIv2-UC-REQ-357523/A-Turn ignition on*

Actors	Driver, CCS OnBoardPolicyServer, CCS OnBoardPolicyClient
Pre-conditions	Ignition Off, CCS OnBoardPolicyClient is turned off, CCS System is in state "Invalid"
Scenario Description	1. Driver turns on ignition 2. CCS OnBoardPolicyServer and CCS OnBoardPolicyClient start up 3. CCS OnBoardPolicyServer holds an update of PTE or CFM file 4. CCS System transitions through OnboardDistributedStateMachine to state "Synchronizing" 5. CCS Server transmits new policy files to CCS Client successfully 6. CCS Server and Client enter Synchronization state "Synchronized"
Post-conditions	Latest policy files synchronized between CCS Server and CCS Client
List of Exception Use Cases	E1: 3a) CCS Server has no update of policy files compared to the meta data received via SynchronizationSession_Rq .1 CCS System transitions through OnboardDistributedStateMachine to "Synchronized" without policy file transfer
Interfaces	

3.3.1.2   *CCOIv2-UC-REQ-362912/A-Turn HMI System on*

Actors	Driver, CCS OnBoardPolicyServer, CCS OnBoardPolicyClient
Pre-conditions	Ignition Off, CCS OnBoardPolicyClient is turned off, CCS System is in state "Invalid"
Scenario Description	1. Driver turns OnBoardPolicyClient on while Ignition off 2. CCS OnBoardPolicyServer and CCS OnBoardPolicyClient start up 3. CCS OnBoardPolicyServer holds an update of PTE or CFM file 4. CCS System transitions through OnboardDistributedStateMachine to state "Synchronizing" 5. CCS Server transmits new policy files to CCS Client successfully 6. CCS Server and Client enter Synchronization state "Synchronized"
Post-conditions	Latest policy files synchronized between CCS Server and CCS Client
List of Exception Use Cases	E1: 3a) CCS Server has no update of policy files compared to the meta data received via SynchronizationSession_Rq .1 CCS System transitions through OnboardDistributedStateMachine to "Synchronized" without policy file transfer
Interfaces	

3.3.1.3   *CCOIv2-UC-REQ-362282/A-Policy File received from OffBoardPolicyClient*

Actors	CCS OffBoardPolicyClient, CCS OnBoardPolicyServer, CCS OnBoardPolicyClient

Pre-conditions	CCS OnBoardPolicyServer and CCS OnBoardPolicyClient are running, CCS System is in state "Synchronized"
Scenario Description	1. CCS OnBoardPolicyServer receives a PTE or CFM file update via OffBoardSynchronization
	2. CCS OnBoardPolicyServer completes Consistency Check successfully
	3. CCS System transitions to "synchronizing"
	4. CCS Server transmits new policy files to CCS Client successfully
	5. CCS Server and Client enter Synchronization state "Synchronized"
Post-conditions	Policy files synchronized between CCS Server and CCS Client
List of Exception Use Cases	E1:
	1a) CCS OnBoardPolicyServer received an SCF policy file update
	.1 CCS Server does not initiate an OnBoardSynchronization
	E2:
	2a) Consistency Check was not successful
	.1 CCS Server does not initiate an OnBoardSynchronization
	E3:
	4a) Transmission failed
	.1 CCS Server applies OnBoardSynchronization retry strategy
Interfaces	

3.3.1.4 CCOIv2-UC-REQ-357522/A-Revert to Default Policy File

Actors	Test Engineer, CCS OnBoardPolicyServer
Pre-conditions	CCS OnBoardPolicyServer and CCS OnBoardPolicyClient are running, CCS System synchronized with Custom Policy File for testing
Scenario Description	1. Test Engineer reverts to default Policy File on CCS OnBoardPolicyServer with development tool
	2. CCS OnBoardPolicyServer initiates Synchronization with default policy file
Post-conditions	CCS System synchronized with default Policy File
List of Exception Use Cases	
Interfaces	

3.3.1.5 CCOIv2-UC-REQ-357525/A-Software Update

Actors	Dealer, Backend, CCS OnBoardPolicyServer
Pre-conditions	CCS OnBoardPolicyServer and CCS OnBoardPolicyClient are running, CCS System synchronized
Scenario Description	1. Dealer or Backend initiates module software update
	2. CCS System enters Synchronization state "Invalid"
	3. Software update completes
	4. CCS System transitions through OnboardDistributedStateMachine to state "Synchronizing"
	5. CCS Server transmits new policy files to CCS Client successfully
	6. CCS Server and Client enter Synchronization state "Synchronized"
Post-conditions	Latest policy files synchronized between CCS Server and CCS Client
List of Exception Use Cases	4a. CCS Server has no update of policy files compared to the meta data received via SynchronizationSession_Rq
	.1 CCS System transitions through OnboardDistributedStateMachine to "Synchronized" without policy file transfer

Interfaces	

3.3.1.6 CCOIv2-UC-REQ-362319/A-Setting Change while OnBoardSynchronization

Actors	CCS OnBoardPolicyServer, CCS OnBoardPolicyClient, Driver
Pre-conditions	CCS OnBoardPolicyServer and CCS OnBoardPolicyClient are running, CCS System synchronized
Scenario Description	1. CCS OnBoardPolicyServer transfers a Policy File to CCS OnBoardPolicyClient via OnBoardSynchronization 2. While Synchroization process, Driver enters CCS menu and changes an entitiy setting 3. CCS OnBoardPolicyClient and CCS OnBoardPolicyServer appy rule set of the last successfully synchronized policy files
Post-conditions	OnBoardSynchronization completes successful, CCS OnBoardPolicyServer uses new Policy File set for future entity setting changes
List of Exception Use Cases	E1: 3a) CCS System is in state "Unrecoverable" or "DataStorageError" .1 CCS OnBoardPolicyClient applies HMI lockout, no CCS setting changes possible
Interfaces	

3.3.1.7 CCOIv2-UC-REQ-362320/A-Subscription Change while OnBoardSynchronization

Actors	Backend, CCS OnBoardPolicyServer, CCS OnBoardPolicyClient
Pre-conditions	CCS OnBoardPolicyServer and CCS OnBoardPolicyClient are running, CCS System synchronized
Scenario Description	1. CCS OnBoardPolicyServer transfers a Policy File to CCS OnBoardPolicyClient via OnBoardSynchronization 2. While OnBoardSynchronization, Backend triggers a CCS Subscription value change via Config Change Command 3. CCS OnBoardPolicyClient and CCS OnBoardPolicyServer appy rule set of the LastKnownGood policy files
Post-conditions	OnBoardSynchronization completes successful, OnBoardPolicyServer uses new Policy File set for future entity setting changes

List of Exception Use Cases	E1:
	3a) CCS System is in state "Unrecoverable"
	   .1 CCS OnBoardPolicyServer applies rule set of the LastKnownGood record
	
	E2:
	3b) CCS System is in state "DataStorageError"
	   .1 CCS OnBoardPolicyServer shall not persist the new entity value.
	   .2 Once CCS OnBoardPolicyServer transistions to any synchronization state other than DataStorageError, the CCS OnBoardPolicyServer shall persist the new entity value.

Interfaces	

3.3.1.8 CCOIv2-UC-REQ-362321/A-Authorization Change while OnBoardSynchronization

Actors	Backend, CCS OnBoardPolicyServer, CCS OnBoardPolicyClient
Pre-conditions	CCS OnBoardPolicyServer and CCS OnBoardPolicyClient are running, CCS System synchronized
Scenario Description	1. CCS OnBoardPolicyServer transfers a Policy File to CCS OnBoardPolicyClient via OnBoardSynchronization

	2. While OnBoardSynchroniazation, Backend triggers an Authorization status change via Auth Status Change Command 3. CCS OnBoardPolicyClient and CCS OnBoardPolicyServer appy rule set of the LastKnownGood policy files
Post-conditions	OnBoardSynchronization completes successfully, OnBoardPolicyServer uses new Policy File set for future entity setting changes

List of Exception Use Cases	E1:
	3a) CCS System is in state "Unrecoverable"
	   .1 CCS OnBoardPolicyServer applies rule set of the LastKnownGood record
	
	E2:
	3b) CCS System is in state "DataStorageError"
	   .1 CCS OnBoardPolicyServer shall reject the Authorization update and send the Auth Status Change Command Response as "FAILED"

Interfaces	

3.3.1.9 *CCOIv2-UC-REQ-362336/A-User/Authorization Prompt while OnBoardSynchronization*

Actors	Backend, CCS OnBoardPolicyServer, CCS OnBoardPolicyClient
Pre-conditions	CCS OnBoardPolicyServer and CCS OnBoardPolicyClient are running, CCS System synchronized
Scenario Description	1. CCS OnBoardPolicyServer transfers a Policy File to CCS OnBoardPolicyClient via OnBoardSynchronization 2. While OnBoardSynchronization, Backend triggers an Authorization Prompt or User Prompt 3. CCS OnBoardPolicyClient and CCS OnBoardPolicyServer appy rule set of the LastKnownGood policy files
Post-conditions	OnBoardSynchronization completes successful, OnBoardPolicyServer uses new Policy File set for future entity setting changes
List of Exception Use Cases	E1: 3a) CCS System is in state "DataStorageError" .1 CCS OnBoardPolicyServer shall not trigger the corresponding User Prompt and shall send the Response as "FAILED"/"DENIED"
Interfaces	

3.3.2 Requirements (Client)

3.3.2.1 *CCOIv2-REQ-354018/A-OnBoardHMISystemPolicyClient Synchronization State Transitions*

For running the distributed state machine, the OnBoardPolicyServer and the OnBoardPolicyClient may lead each other into entering a new state.

Each endpoint may signal this new state, and the onboard system state is assumed to be entered, once both endpoints signal this state. The table below depicts the combinations that may occur. Upon an "entered state(…)" operation in the sequence diagrams, it is assumed that the operation waits until the other end has acknowledged this state, or a configurable timeout occurred.

OnBoardHPolicyClient_St In State	**Trigger and Guard**	**OnBoardPolicyClient_St Transitions to and Transmits New State**
Invalid	OnBoardPolicyClient is started OR Firmware update completed and OnBoardPolicyClient is restarted	Waiting

OnBoardHPolicyClient_St In State	Trigger and Guard	OnBoardPolicyClient_St Transitions to and Transmits New State
Waiting	OnBoardPolicyClient initialized, Consistency Check performed (REQ-362371) AND OnBoardPolicyServer_St == SynchronizationNeeded	SynchronizationNeeded
Waiting	OnBoardPolicyServer_St == DataStorageError	DataStorageError
SynchronizationNeeded	OnBoardPolicyServer_St == Synchronized	Synchronized
SynchronizationNeeded	OnBoardPolicyServer_St == Synchronizing	Synchronizing
Synchronizing	OnBoardPolicyServer_St == Synchronized	Synchronized
Synchronizing	Hash comparison failed (REQ-358309)	SynchronizationFailed
Synchronizing	OnBoardPolicyServer_St == SynchronizationFailed	SynchronizationFailed
SynchronizationFailed	OnBoardPolicyServer_St == SynchronizationNeeded	SynchronizationNeeded
Any of {Waiting, DataStorageError, SynchronizationNeeded, Synchronizing, SynchronizationFailed, Synchronized}	OnBoardPolicyServer_St == OnBoardDistributed StateMachine Inconsistent	OnBoardDistributed StateMachine Inconsistent
OnBoardDistributed StateMachine Inconsistent	OnBoardPolicyServer_St == Waiting	Waiting
Any of {Waiting, DataStorageError, SynchronizationNeeded, Synchronizing, SynchronizationFailed, Synchronized, OnBoardDistributed StateMachine Inconsistent}	OnBoardPolicyServer_St == Unrecoverable SynchronizationError	UnrecoverableSynchronizationError
Synchronized	OnBoardPolicyServer_St == Synchronizing	Synchronizing
Any of {DataStorageError, SynchronizationNeeded, Synchronizing, SynchronizationFailed, Synchronized, OnBoardDistributed StateMachine Inconsistent}	OnBoardPolicyServer_St == Invalid OR OnBoardPolicyServer_St signal missing	Waiting
DataStorageError	OnBoardPolicyServer_St == SynchronizationNeeded	SynchronizationNeeded
Any state	OnBoardPolicyClient shutting down OR OnBoardPolicyClient is conducting firmware update	Invalid

Table 3 – State Transition Table

3.3.2.1.1   CCOIv2-REQ-362524/A-Invalid to Waiting

CCS OnBoardPolicyClient shall transition from Invalid into the Waiting state every time the implementing part starts up OR restarts after a Firmware update completed.

3.3.2.1.2   CCOIv2-REQ-362525/A-Any to Invalid

If the driver turns off ignition OR if the CCS Client is conducting a firmware update, CCS OnBoardPolicyClient shall transition from any state to state „Invalid".

3.3.2.1.3   CCOIv2-REQ-359108/A-Client Hash Check in State Synchronizing

Once CCS OnBoardPolicyClient receives new policy files in state "Synchronizing", CCS OnBoardPolicyClient shall decompress, calculate the hash for any of the received policy files:

3.3.2.1.3.1   CCOIv2-REQ-358309/A-Hash Value mismatch

If any of the calculated hash values does not match to the received hash values, CCS OnBoardPolicyClient shall transition to state „SynchronizationFailed".

3.3.2.1.3.2   CCOIv2-REQ-358466/A-Hash Value match

If all calculated hash values match to the received hash values, CCS OnBoardPolicyClient shall:
- Store the received policy files including meta data in the persistent storage
- Send a SynchronizationSummaryReport, with Meta Data of the files as stored in the persistent storage, to CCS OnBoardPolicyServer.

3.3.2.2   CCOIv2-REQ-359109/A-SynchronizationSessionRequest

Once the OnBoardDistributedStateMachine reached state „SynchronizationNeeded", CCS OnBoardPolicyClient shall send the meta data of the PTE and CFM policy files stored in the persistent storage to CCS OnBoardPolicyServer via SynchronizationSession_Rq.
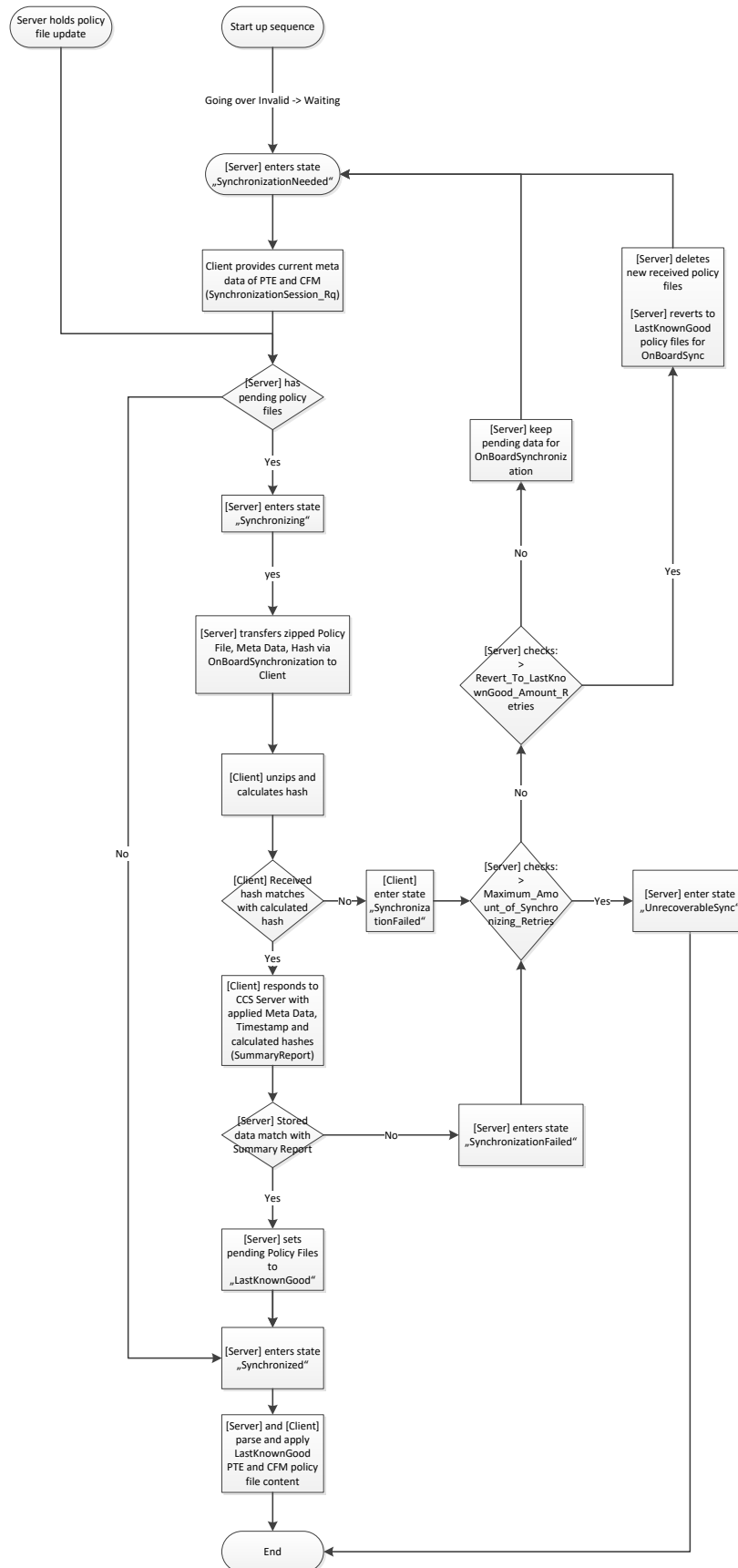
3.3.2.3   CCOIv2-REQ-362526/A-Application of synchronized Policy Files

OnBoardPolicyClient shall only parse new PTE or CFM policy files, after CCS OnBoardPolicyClient entered state „Synchronized".

3.3.3 Activity Diagrams

3.3.3.1 CCOIv2-ACT-REQ-362528/A-OnBoardSynchronization

Server holds policy file update

Start up sequence

Going over Invalid -> Waiting

[Server] enters state „SynchronizationNeeded"

Client provides current meta data of PTE and CFM (SynchronizationSession_Rq)

[Server] has pending policy files

[Server] deletes new received policy files

[Server] reverts to LastKnownGood policy files for OnBoardSync

Yes

[Server] enters state „Synchronizing"

yes

[Server] keep pending data for OnBoardSynchronization

No

[Server] transfers zipped Policy File, Meta Data, Hash via OnBoardSynchronization to Client

[Server] checks: > Revert_To_LastKnownGood_Amount_Retries

[Client] unzips and calculates hash

No

No

[Client] Received hash matches with calculated hash

No

[Client] enter state „SynchronizationFailed"

[Server] checks: > Maximum_Amount_of_Synchronizing_Retries

Yes

[Server] enter state „UnrecoverableSync"

Yes

[Client] responds to CCS Server with applied Meta Data, Timestamp and calculated hashes (SummaryReport)

[Server] Stored data match with Summary Report

No

[Server] enters state „SynchronizationFailed"

Yes

[Server] sets pending Policy Files to „LastKnownGood"

[Server] enters state „Synchronized"

[Server] and [Client] parse and apply LastKnownGood PTE and CFM policy file content

End

3.3.4 State Machine Diagrams
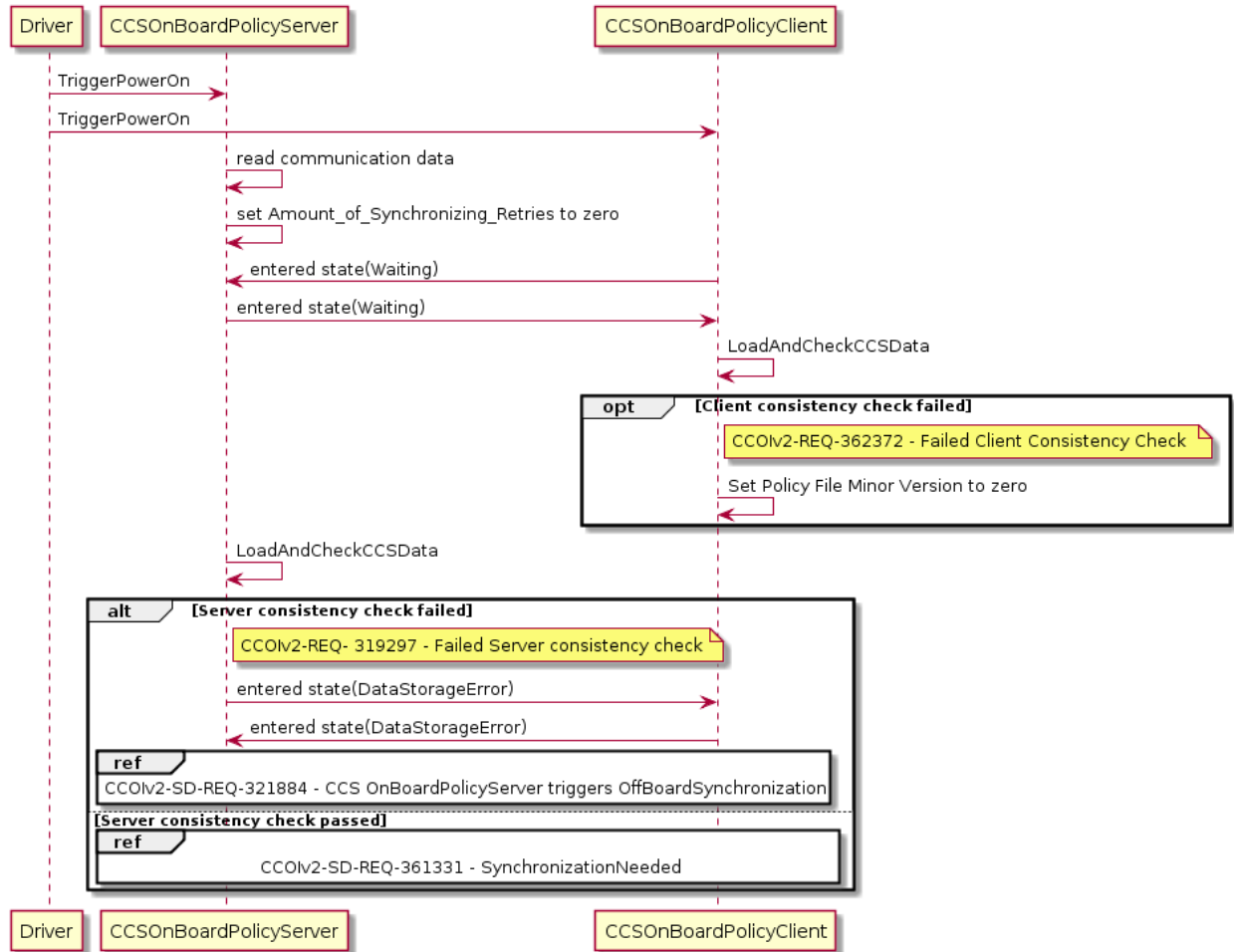
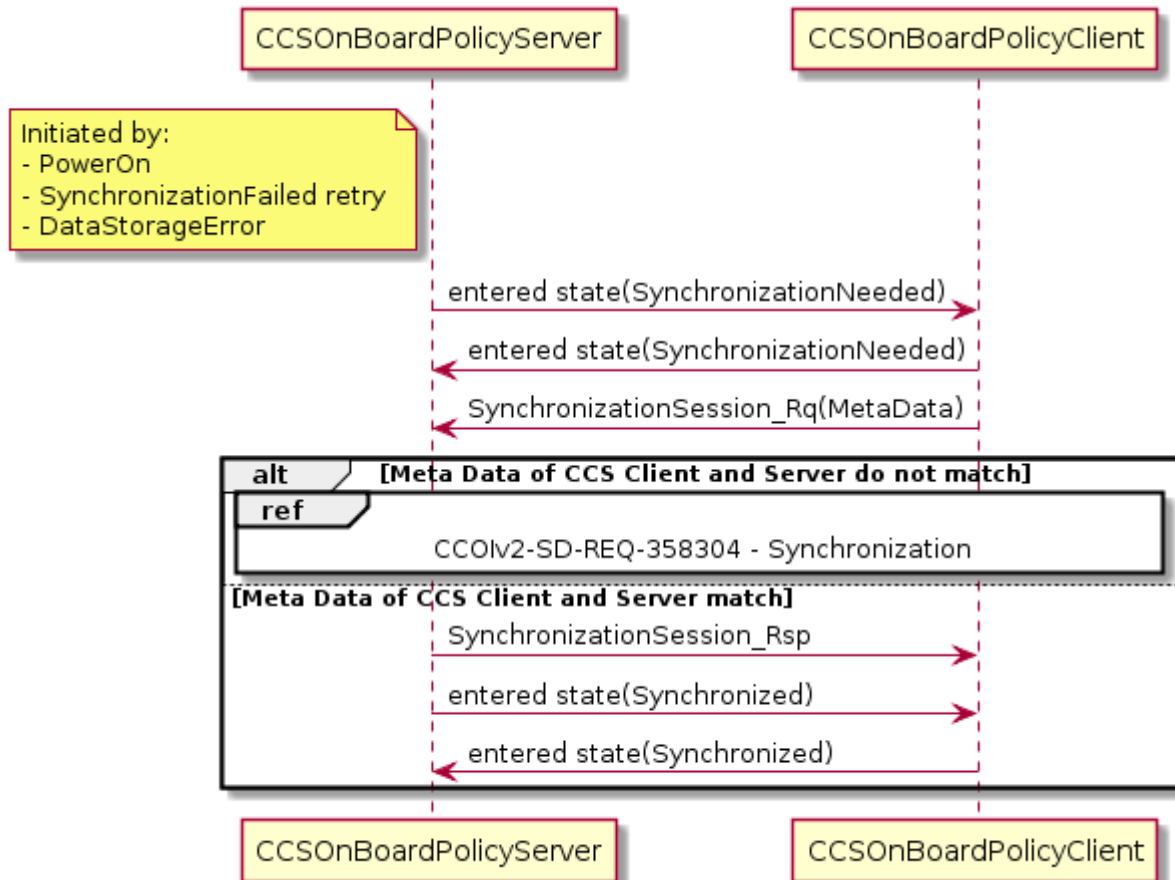#### 3.3.4.1 CCOIv2-STM-REQ-358305/A-OnBoardSynchronization
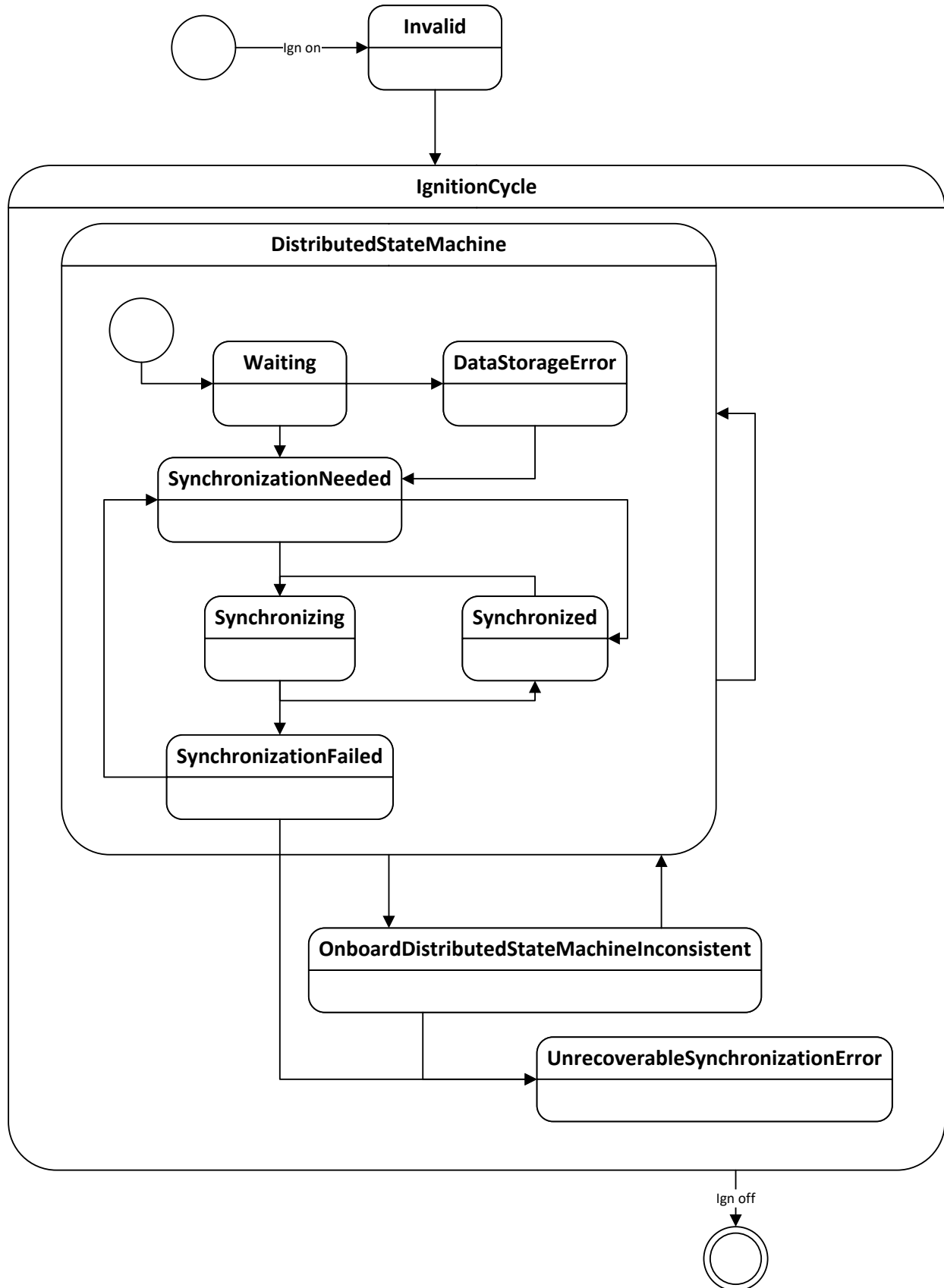
3.3.5   Sequence Diagrams

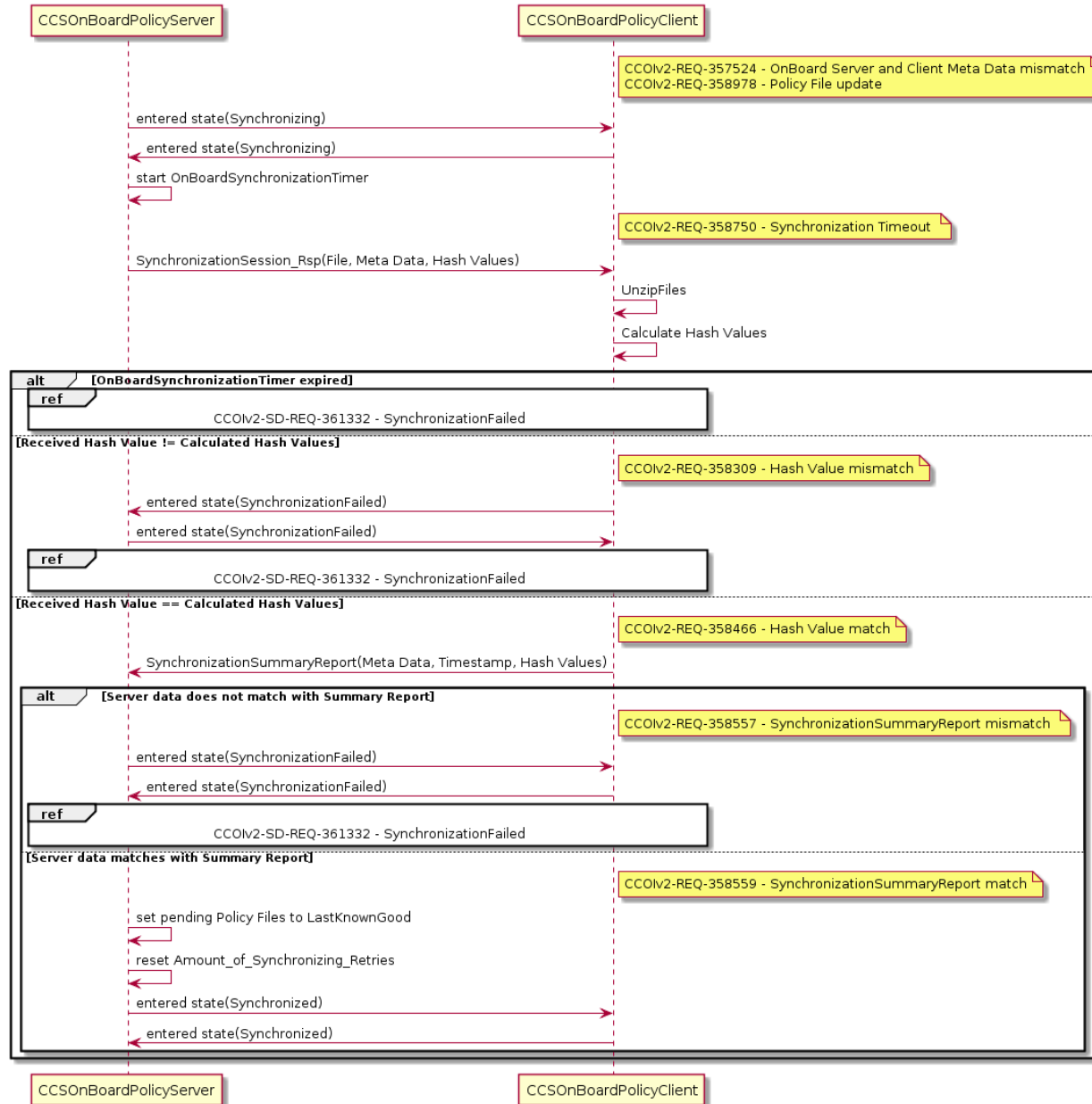### 3.3.5.1   *CCOIv2-SD-REQ-358303/A-Power On Sequence*

### 3.3.5.2 *CCOIv2-SD-REQ-361331/A-SynchronizationNeeded*

CCSOnBoardPolicyServer — CCSOnBoardPolicyClient

Initiated by:
- PowerOn
- SynchronizationFailed retry
- DataStorageError

entered state(SynchronizationNeeded) →

← entered state(SynchronizationNeeded)

← SynchronizationSession_Rq(MetaData)

alt [Meta Data of CCS Client and Server do not match]

ref
CCOIv2-SD-REQ-358304 - Synchronization

[Meta Data of CCS Client and Server match]

SynchronizationSession_Rsp →

entered state(Synchronized) →

← entered state(Synchronized)

CCSOnBoardPolicyServer — CCSOnBoardPolicyClient

3.3.5.3 *CCOIv2-SD-REQ-358304/A-Synchronization*

3.3.5.4 *CCOIv2-SD-REQ-361332/A-SynchronizationFailed*
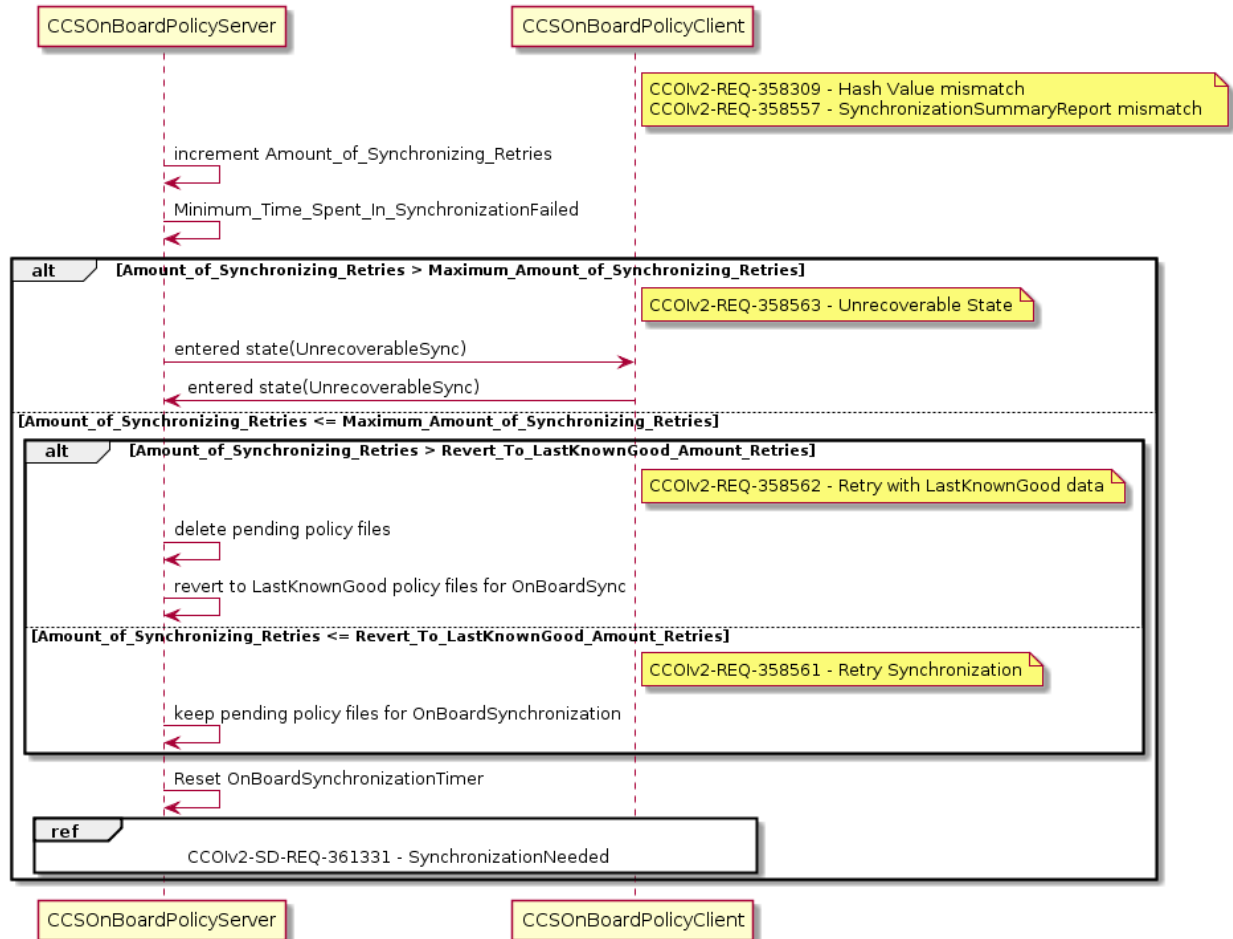
3.4 CCOIv2-FUN-REQ-362638/A-Update Entity Setting (Client)

3.4.1 Use Cases

3.4.1.1 *CCOIv2-UCD-REQ-361932/A-Update Entity Settings*

CCS Onboard System

- Test Engineer
- Dealer
- Driver
- Factory
- Backend

Query on Provisioning REQ-355223

Provisioning

ECG Swap

Change Lifecycle Mode

Query on Ignition Cycle REQ-355220

Restore bUAllow Entity Settings

Update SCF

Update Policy File REQ-355711

<<include>>

3.4.1.2 CCOIv2-UC-REQ-355218/A-Change Consent Setting in Menu

Actors	Driver, Dealer, Test Engineer, CCSOffBoardPolicyClient
Pre-conditions	CCSServerEntitySettingsStatus is in status EntitiesReady
Scenario Description	1. Driver, Dealer, or Test Engineer navigates to the CCS menu 2. Driver, Dealer, or Test Engineer clicks on a toggle switch to change the consent for a CCS entity 3. Driver, Dealer, or Test Engineer accepts the confirmation prompt 4. CCSOnboardPolicyClient requests a settings update for this entity with the CCSOnboardPolicyServer 5. Continue with REQ-355983 Update Settings Onboard
Post-conditions	-

List of Exception Use Cases	E1:
	1a) Menu is not accessible to do Local Update Pop-Up or Feature Unavailable pop-up
	
	E2:
	2a) Changing consent not possible when switch is not changeable (REQ-296876)
	    .1 skip the rest of the steps
	
	E3:
	3a) Driver, Dealer, or Test Engineer declines the confirmation prompt or turns ignition OFF without accepting the prompt
	    .1 skip the rest of the steps

	E4:
	3a) There is no confirmation prompt for this entity defined in REQ-328983-Missing content strategy .1 skip step 3
Interfaces	

3.4.1.3 CCOIv2-UC-REQ-355186/A-Configure CCS Communication Data

Actors	Backend, VSCS, Dealer, Test Engineer
Pre-conditions	-
Scenario Description	1. Backend, VSCS, Dealer or a Test Engineer writes the method 2 parameters for the CCS Communication Data
Post-conditions	The next time the CCSOnboardPolicyServer starts a entity setting update synchronization with the CCSOnboardPolicyClient the CCSOnboardPolicyServer applies the newly added CCS Communication Data from step 1
List of Exception Use Cases	-
Interfaces	

3.4.1.4 CCOIv2-UC-REQ-355202/A-Configure Entity bSAllow

Actors	Test Engineer, VSCS, Backend, Driver
Pre-conditions	-
Scenario Description	1. Backend, VSCS, or Test Engineer change the subscription (bSAllow) bit for one or many entities in the vehicle configuration
	2. CCSOnboardPolicyServer changes the entity subscription bit according to step 1 on the CCSOnboardPolicyServer
	3. Continue with REQ-355983 Update Settings Onboard
Post-conditions	-
List of Exception Use Cases	E2:
	2a) If the apply mode is delayed, change the subscription bit on next ignition on per Ford Telematics Communication Protocol Specification.
Interfaces	

3.4.1.5 CCOIv2-UC-REQ-355203/A-Configure Entity bPAllow

Actors	Test Engineer, Dealer, VSCS, CCSOffBoardPolicyClient, Driver
Pre-conditions	-
Scenario Description	1. CCSOffBoardPolicyClient, VSCS, Dealer or Test Engineer change the vehicle capability (bPAllow) bit for one or many entities in the vehicle configuration
	2. CCSOnboardPolicyServer changes the entity capability bit according to step 1 on the CCSOnboardPolicyServer
	3. Continue with REQ-355983 Update Settings Onboard
Post-conditions	-
List of Exception Use Cases	E1:
	2a) If the apply mode is delayed, change the capability bit on next ignition on per Ford Telematics Communication Protocol Specification.

Interfaces	

3.4.1.6   CCOIv2-UC-REQ-355208/A-Reset

Actors	Backend, Driver, Dealer, Test Engineer, CCSOnboardPolicyServer, CCSOnboardPolicyClient
Pre-conditions	-
Scenario Description	1. Driver, Dealer, or Test Engineer performs a master reset or brand connect reset 2. CCSOnboardPolicyServer resets the entities to their default values 3. Continue with REQ-355983 Update Settings Onboard
Post-conditions	-

List of Exception Use Cases	E1:
	1b) Backend sends a Clear User Settings Command
	    .1 proceed with step 2 of the Scenario Description
	
	E2:
	4a) The vehicle was authorized before the master reset (bAllow for entity "Authorized" ID 3, Type 0 is enabled)
	    .1 Continue with REQ-355207 Authorization Status Change (CCS OnBoardPolicyServer)

Interfaces	

3.4.1.7   CCOIv2-UC-REQ-355201/A-Provisioning

Actors	Dealer, Test Engineer, Factory, CCSOnboardPolicyServer, CCSOnboardPolicyClient
Pre-conditions	Vehicle is in un-provisioned state
Scenario Description	1. Dealer, Test Engineer, or Factory puts the vehicle in provisioned state 2. CCSOnboardPolicyServer sets the default CCS entity settings 3. Continue with use case REQ-355983 Update Settings Onboard 4. Continue with use case REQ-355223 Query on Provisioning (CCS OnBoardPolicyServer)
Post-conditions	-
List of Exception Use Cases	-
Interfaces	

3.4.1.8   CCOIv2-UC-REQ-355204/A-Change Lifecycle Mode

Actors	Dealer, Test Engineer, Factory
Pre-conditions	-
Scenario Description	1. Dealer, Test Engineer, or Factory changes the vehicle's life cycle mode 2. CCSOnboardPolicyServer sets the default CCS entity settings 3. Continue with REQ-355983 Update Settings Onboard
Post-conditions	The vehicle uses the CCS default entity settings
List of Exception Use Cases	-
Interfaces	

3.4.1.9   CCOIv2-UC-REQ-355206/A-ECG Swap

Actors	Dealer, Test Engineer
Pre-conditions	-
Scenario Description	1. Dealer or Test Engineer inhale all method 2 parameters from old module (including bSAllow and bPAllow entity bits as well as CCS Communication Data) 2. Dealer or Test Engineer replace the ECG module with a another ECG module 3. Dealer or Test Engineer exhale all method 2 parameters to new module (including bSAllow and bPAllow entity bits as well as CCS Communication Data) 4. Continue with use case REQ-355201 Provisioning
Post-conditions	-

List of Exception Use Cases	E1:
	1a) Inhale not possible
	   .1 the Dealer or Test Engineer does a reconstruction of the method 2 parameters from the end of line configuration and subscription parameters in the backend
	   .2 continue with step 2. of the Scenario Description
	   .3 the Dealer or Test Engineer uses the reconstructed method 2 parameters from above for step 3. of the Scenario Description
	   .4 continue with step 4. of the Scenario Description

Interfaces	

3.4.1.10 CCOIv2-UC-REQ-355212/A-Restore bUAllow Entity Settings

Actors	CCSOnBoardPolicyServer, CCSOnboardPolicyClient, CCSOffBoardPolicyClient
Pre-conditions	1. CCSOnBoardPolicyServer received valid setting update in REQ-355220 Query on Ignition Cycle
Scenario Description	1. CCSOnBoardPolicyServer changes bUAllow entity settings 2. Continue with REQ-355983 Update Settings Onboard
Post-conditions	CCSOnBoardPolicyServer has restored the settings form the CCSOffBoardPolicyClient.
List of Exception Use Cases	
Interfaces	

3.4.1.11 CCOIv2-UC-REQ-355214/A-Update SCF

Actors	CCSOnboardPolicyServer, CCSOnboardPolicyClient, Policy Enforcers
Pre-conditions	1. CCS OnBoardPolicyServer received a valid SCF file in REQ-355711 Update Policy File
Scenario Description	1. Continue with REQ-355983 Update Settings Onboard
Post-conditions	-
List of Exception Use Cases	
Interfaces	

3.4.1.12 CCOIv2-UC-REQ-355205/A-Hard Reset

Actors	Dealer, Test Engineer

Pre-conditions	-
Scenario Description	1. Dealer or Test Engineer perform a diagnostic hard reset
Post-conditions	CCS entity settings remain the same
List of Exception Use Cases	-
Interfaces	

3.4.1.13 CCOIv2-UC-REQ-362905/A-Update Software

Actors	Dealer, Test Engineer, Backend
Pre-conditions	-
Scenario Description	1. Dealer, Test Engineer, or Backend install a software update on the vehicle
Post-conditions	CCS entity settings remain the same
List of Exception Use Cases	-
Interfaces	

3.4.1.14 CCOIv2-UC-REQ-355215/A-Re-connect Battery

Actors	Dealer, Test Engineer, Driver
Pre-conditions	-
Scenario Description	1. Dealer, Test Engineer, or Driver disconnects the vehicle's battery 2. Dealer, Test Engineer, or Driver reconnects the vehicle's battery
Post-conditions	CCS entity settings remain the same
List of Exception Use Cases	-
Interfaces	

3.4.1.15 CCOIv2-UC-REQ-355983/A-Update Settings Onboard

Actors	CCSOnboardPolicyServer, CCSOnboardPolicyClient, CCSOnboardModemPolicyClient, FNV2_VIM, FNV2_ALM, and CCSOffBoardPolicyClient
Pre-conditions	-
Scenario Description	1. CCSOnBoardPolicyServer sends the CCS entity settings to the CCSOnBoardPolicyClient and CCSOnboardModemPolicyClient 2. CCSOnboardModemPolicyClient and CCSOnboardModemPolicyClient confirm to the CCSOnBoardPolicyServer that they use the received CCS entity settings 3. CCSOnBoardPolicyServer sends the new CCS blacklist to the FNV2_VIM and FNV2_ALM.
Post-conditions	1. CCSOnboardPolicyServer, CCSOnboardPolicyClient, CCSOnboardModemPolicyClient, and CCSOffBoardPolicyClient have the same, updated entity settings 2. All CCS blacklisted data elements are disabled by FNV2_VIM 3. All applications listed on the CCS blacklist are disabled by FNV2_ALM
List of Exception Use Cases	
Interfaces	

3.4.2   Requirements

3.4.2.1   CCOIv2-REQ-362811/A-Driver Changes a Setting in Menu

3.4.2.1.1   CCOIv2-REQ-296879/D-Entity toggle switch changed to "on"

If the driver toggles an entity switch from off to on and the driver has accepted the consent prompt, if applicable (see REQ-328983-Missing content strategy) the CCSOnboardPolicyClient shall send a SettingsUpdate_RQ to the CCSOnboardPolicyServer to set the bUAllow bit of the corresponding entity to True.
If a driver does not accept the consent prompt, the CCSOnboardPolicyClient shall not send a SpcmCcsmSettingsUpdateInd.

3.4.2.1.2   CCOIv2-REQ-296880/D-Entity toggle switch changed to "off"

If the driver toggles an entity switch from on to off and the driver has accepted the consent prompt, if applicable (see REQ-328983-Missing content strategy) the CCSOnboardPolicyClient shall send a SettingsUpdate_RQ to the CCSOnboardPolicyServer to set the bUAllow bit of the corresponding entity to False.
If a driver does not accept the consent prompt, the CCSOnboardPolicyClient shall not send a SpcmCcsmSettingsUpdateInd.

3.4.2.1.3   CCOIv2-REQ-296881/B-Switching entites on/off no consent prompt required per PTE

If the driver toggles an entity switch from off to on (on to off) and the corresponding consent prompt messageCode is empty or "NULL" (see REQ-328983-Missing content strategy) the CCSOnboardPolicyClient shall send a SpcmCcsmSettingsUpdateInd to the CCSOnboardPolicyServer to set the bUAllow bit of the corresponding entity to True (False).

3.4.2.2   CCOIv2-REQ-362639/A-Client Sends Read Entity Setting Request on Start-up

When the CCSOnBoardPolicyClient is started-up, the CCSOnBoardPolicyClient shall send an SpcmCcsmEntitySettingsReadReq without entities in it to the CCSOnBoardPolicyServer to request all latest entity settings.

3.4.2.3   CCOIv2-REQ-362640/A-Store Server Entity Settings on Client: Client Starts-up

When the CCSOnBoardPolicyClient receives entity settings through the SpcmCcsmEntitySettingsReadResp from the CCSOnBoardPolicyServer, the CCSOnBoardPolicyClient shall store the received entity settings.

3.4.2.4   CCOIv2-REQ-362641/A-Store Server Entity Settings on Client: Server updated A CCS Entity

When the CCSOnBoardPolicyClient receives the SpcmCcsmEntitySettingsUpdateInd from the CCSOnBoardPolicyServer, the CCSOnBoardPolicyClient shall store the received entity settings.
- If the CCSOnBoardPolicyClient stored the settings, the CCSOnBoardPolicyClient shall send a SpcmCcsmEntitySettingsUpdateResp to the CCSOnBoardPolicyServer as Success with ECU ID SYNC=0x7D0.
- If the CCSOnBoardPolicyClient was not able to store the settings, the CCSOnBoardPolicyClient shall send a SpcmCcsmEntitySettingsUpdateResp to the CCSOnBoardPolicyServer as Failure with ECU ID SYNC=0x7D0.

Rationale: All CCS clients should store the CCS settings locally to be able to answer setting read requests from applications on the client's module.

3.4.2.5   CCOIv2-REQ-362817/A-Inform Features about Entity Setting Changes

If the CCSOnBoardPolicyClient receives CCS entity setting changes from the CCSOnBoardPolicyServer (REQ-362640-Store Server Entity Settings on Client: Client Starts-up, REQ-362641-Store Server Entity Settings on Client: Server updated A CCS Entity) the CCSOnBoardPolicyClient shall inform CCSOnBoardPolicyClient features about the updated entity setting changes.
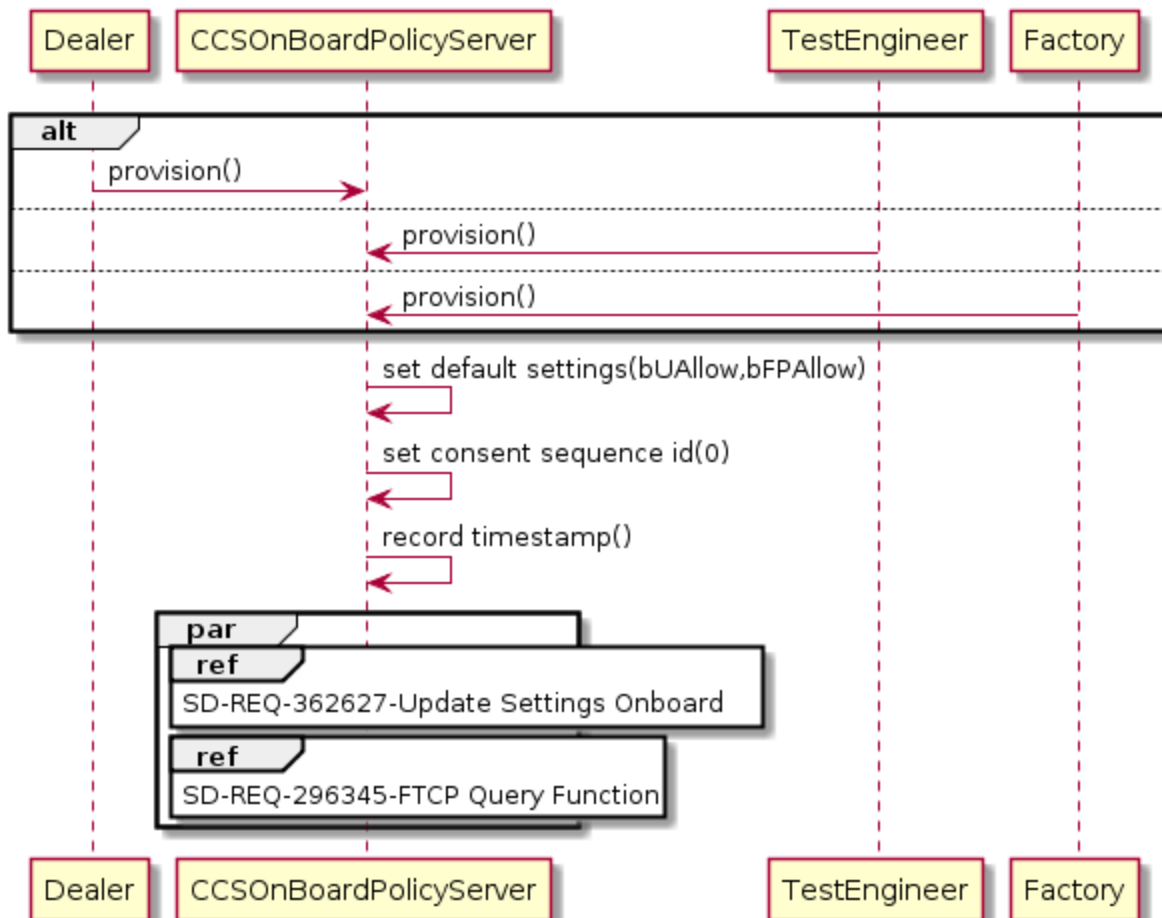
3.4.2.6   CCOIv2-REQ-362818/A-Provide Entity Settings Information on Request

If the CCSOnBoardPolicyClient receives a read request to read CCS entity settings from a CCSOnBoardPolicyClient feature the CCSOnBoardPolicyClient shall respond with the corresponding CCS entity settings.
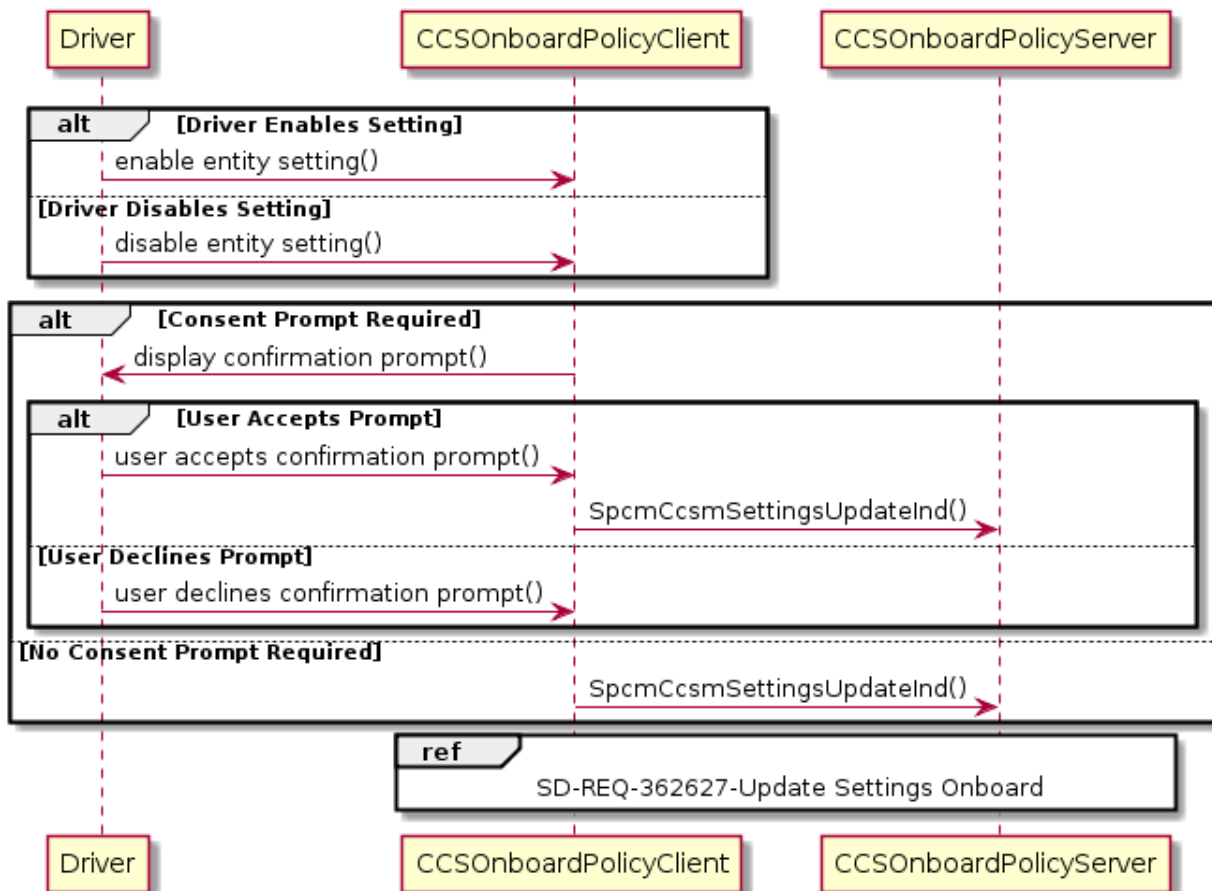
3.4.3 Sequence Diagrams

3.4.3.1 *CCOIv2-SD-REQ-362625/A-Provisioning*

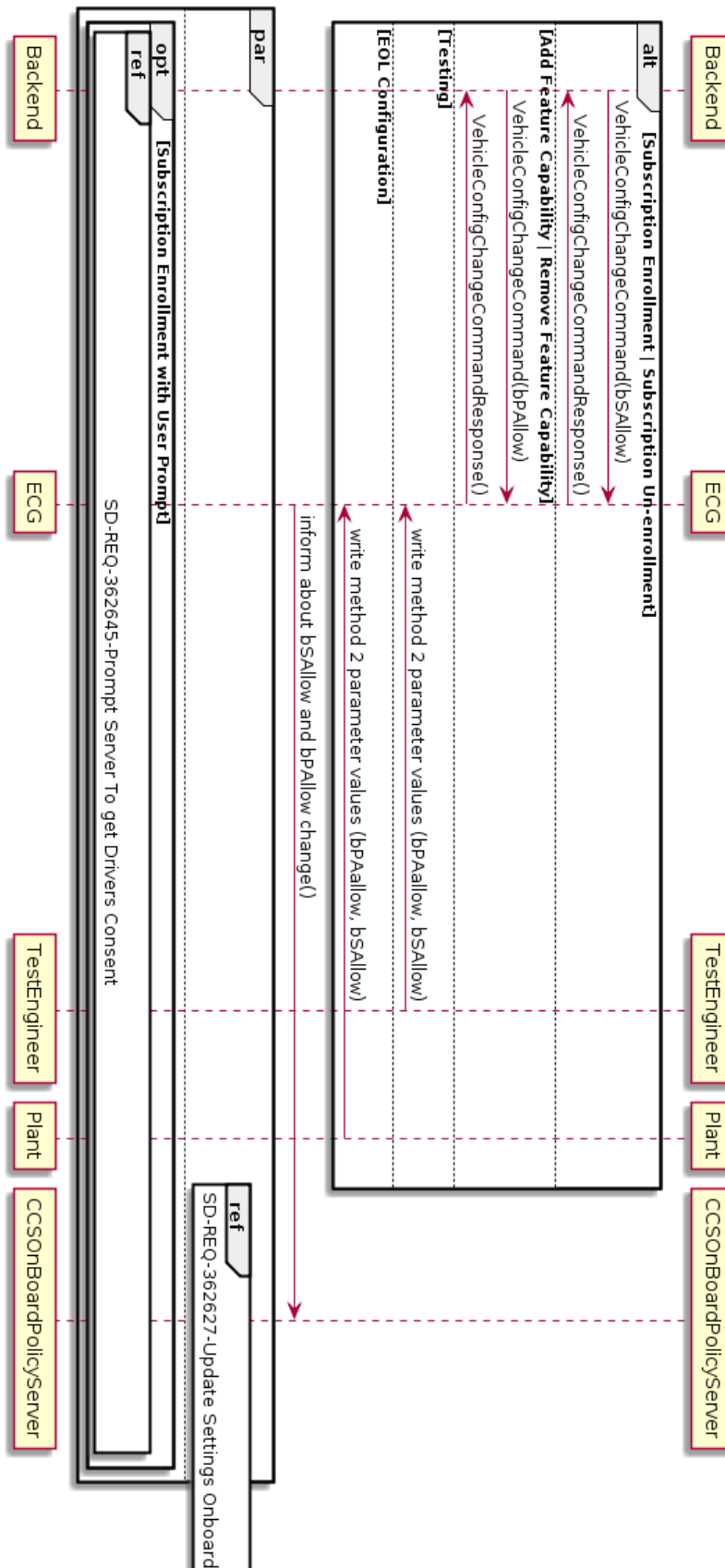### 3.4.3.2 *CCOIv2-SD-REQ-321292/C-Change Consent Setting in Menu*

Linked Elements
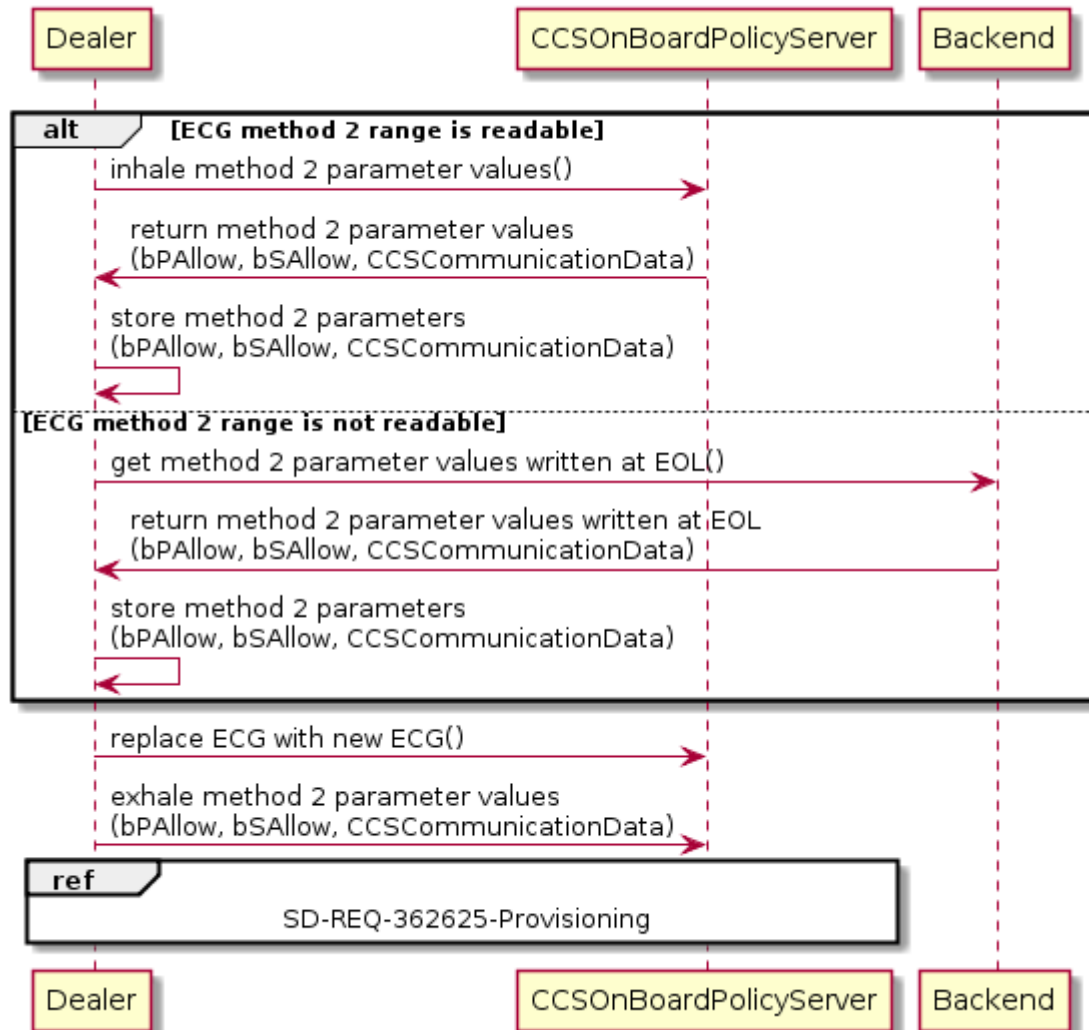CCOIv2-UC-REQ-291421/B-Change entity setting by User

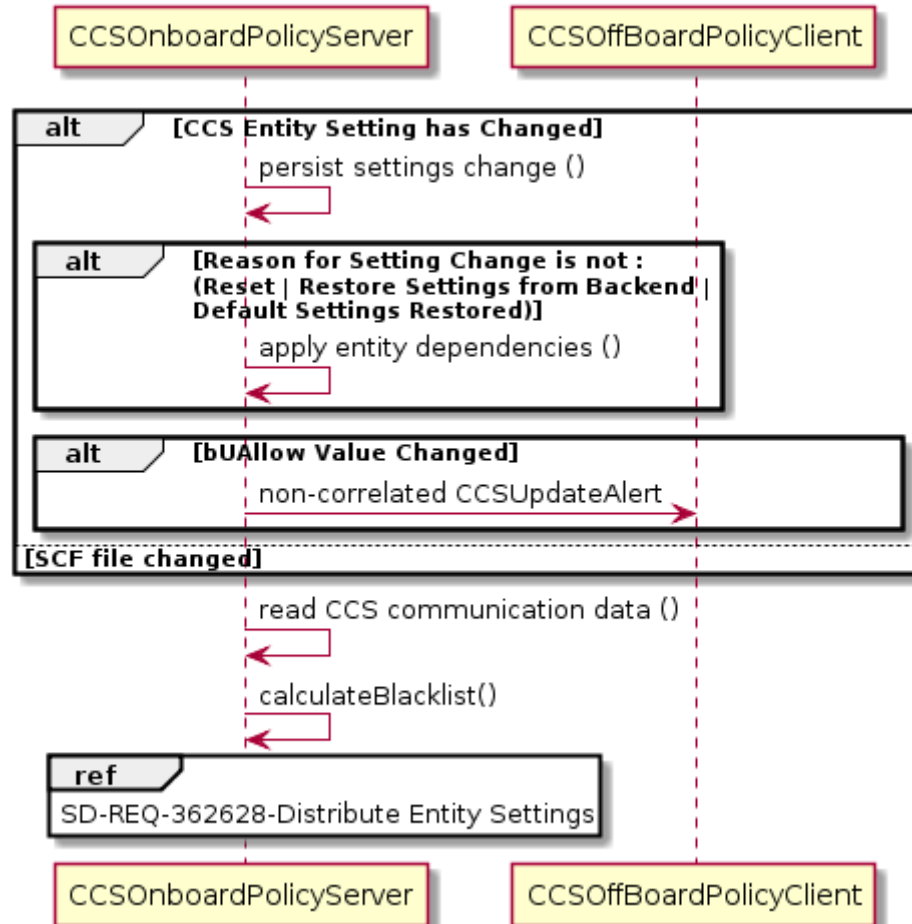### 3.4.3.3 CCOIv2-SD-REQ-362624/A-bPAllow or bSAllow Configuration Change
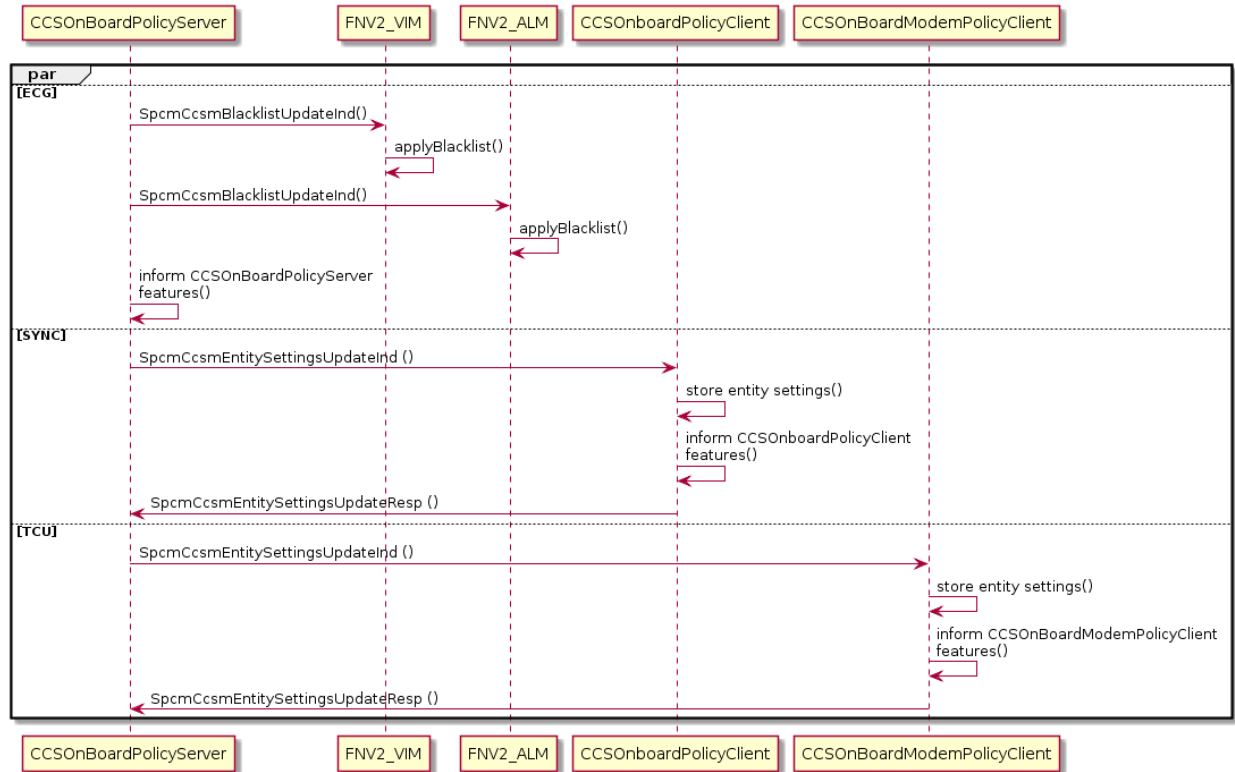
3.4.3.4 CCOIv2-SD-REQ-362626/A-ECG Swap

3.4.3.5 *CCOIv2-SD-REQ-362627/A-Update Settings Onboard*

3.4.3.6 *CCOIv2-SD-REQ-362628/A-Distribute Entity Settings*

3.5 CCOIv2-FUN-REQ-362747/A-Policy Enforcement (Client)

The central purpose of CCS is to give notice and control to vehicle users regarding the data that is wirelessly transmitted off of the vehicle, helping Ford's compliance with data protection requirements including the European GDPR regulations. It demands to give a user control of which data is being shared with granular control of different data categories. Any opt-in/opt-out decision the user has made via the CCS HMI is broadcasted on the vehicle system, so the settings can be applied by any connected feature. To guarantee compliance and a robust technical solution, in a second step CCS enforces the settings via the CCS Policy Enforcer.

3.5.1 Use Cases

3.5.1.1 *CCOIv2-UC-REQ-296189/D-Enforce policies*

Actors	CCSOnBoardPolicyServer, CCSOnBoardPolicyClient, CCSOnBoardPolicyModemClient, ALM, VIM, Feature Applications
Pre-conditions	Updated Entity Settings and Blacklist are distributed to all relevant parties (ref. UC-REQ-355983-Update Settings Onboard)
Scenario Description	1. PolicyEnforcers apply received blacklist and settings: 2. ECG enforces policies 2.1. VIM blocks application's access to information that a driver does not want to share 2.2. ALM turns applications off that are disabled by the driver 3. SYNC enforces policies 3.1. Trusted Feature Applications don't send information off board that a driver does not want to share 3.2. Feature Applications don't get access to information that a driver does not want to share 4. TCU enforces policies 4.1. Trusted Feature Applications don't send information off board that a driver does not want to share
Post-conditions	All policy enforcers behave according to the latest driver privacy settings.
List of Exception Use Cases	E1: Some features may have exceptions from policy enforcement if there are legal grounds. See requirements section for details.
Interfaces	

3.5.2 Requirements

3.5.2.1 *CCOIv2-REQ-362753/A-Connected Navigation*

If the bAllow for entity ConnectedNavigationviaModem (ID 11, Type 1) is disabled
- the Connected Navigation feature application shall not share any navigation related information outside the vehicle
- the Connected Navigation feature application shall turn the connection to the navigation service provider's backend off

If the bAllow for entity ConnectedNavigationviaModem (ID 11, Type 1) is enabled
- the Connected Navigation feature application is allowed to share navigation related information with the navigation provider's backend
- the Connected Navigation feature application is allowed to turn the connection to the navigation service provider's backend on

Note: the impact of other privacy settings (e.g. location sharing or vehicle data sharing) on the enablement of the feature is handled through REQ-296883-Dependency on Policy Table Extension.

3.5.2.1.1 REQ-362948/A-Connected Navigation - Restricted Data

The Connected Navigation feature application shall limit the Connected Navigation service provider's access to information as outlined in the Connected Navigation specification.

3.5.2.2   CCOIv2-REQ-362754/A-Connected Voice (Nuance)

3.5.2.2.1   CCOIv2-REQ-362757/A-Connected Voice (Nuance) - Nuance Setting

If the bAllow for entity Nuance (ID 41, Type 1) is disabled

- the Connected Voice (Nuance) feature application shall not share voice utterances outside the vehicle
- the Connected Voice (Nuance) feature application shall turn the connection to the connected voice (Nuance) service provider's backend off

If the bAllow for entity Nuance (ID 41, Type 1) is enabled

- the Connected Voice (Nuance) feature application is allowed to share voice utterances with the connected voice (Nuance) service provider's backend
- the Connected Voice (Nuance) feature application is allowed to turn the connection to the connected voice (Nuance) service provider's backend on

3.5.2.2.2   CCOIv2-REQ-362758/A-Connected Voice (Nuance) - Location Sharing Setting

If the bAllow for entity Nuance (ID 41, Type 1) is enabled but the bAllow for entity LocationSharing (ID 4, Type 0) is disabled the Connected Voice (Nuance) feature application shall not share location information outside the vehicle such as the examples listed below.

If the bAllow for entity Nuance (ID 41, Type 1) is enabled and the bAllow for entity LocationSharing (ID 4, Type 0) is enabled the Connected Voice (Nuance) feature application is allowed to share the location information such as the examples listed below with the connected voice (Nuance) service provider's backend.

- current location
- destination information
- route information
- estimated time of arrival

3.5.2.2.3   CCOIv2-REQ-362760/A-Connected Voice (Nuance) - Driving Data Setting

If the bAllow for entity Nuance (ID 41, Type 1) is enabled but the bAllow for entity DrivingCharacteristics (ID 14, Type 0) is disabled the Connected Voice (Nuance) feature application shall not share the driving information such as fuel range and fuel level outside the vehicle.

If the bAllow for entity Nuance (ID 41, Type 1) is enabled and the bAllow for entity DrivingCharacteristics (ID 14, Type 0) is enabled the Connected Voice (Nuance) feature application is allowed to share the driving information such as fuel range and fuel level with the connected voice (Nuance) service provider's backend.

3.5.2.2.4   CCOIv2-REQ-362761/A-Connected Voice (Nuance) - Vehicle Data Setting

If the bAllow for entity Nuance (ID 41, Type 1) is enabled but the bAllow for entity VehicleData (ID 5, Type 0) is disabled the Connected Voice (Nuance) feature application shall not share information about the vehicle, the status or the performance of its systems, such as the car size, outside the vehicle.

If the bAllow for entity Nuance (ID 41, Type 1) is enabled and the bAllow for entity VehicleData (ID 5, Type 0) is enabled the Connected Voice (Nuance) feature application is allowed to share information about the vehicle, the status or the performance of its systems, such as the car size, with the connected voice (Nuance) service provider's backend.

3.5.2.2.5   CCOIv2-REQ-362762/A-Connected Voice (Nuance) - Contact Upload Setting

If the bAllow for entity Nuance (ID 41, Type 1) is enabled but the bAllow for entity Contacts (ID 25, Type 0) is disabled the Connected Voice (Nuance) feature application shall not share information about the paired phone contacts and devices outside the vehicle.

If the bAllow for entity Nuance (ID 41, Type 1) is enabled and the bAllow for entity Contacts (ID 25, Type 0) is enabled the Connected Voice (Nuance) feature application is allowed to share information about the paired phone contacts and devices with the connected voice (Nuance) service provider's backend.

3.5.2.2.6 CCOIv2-REQ-362764/A-Connected Voice (Nuance) - Restricted Data

The Connected Voice (Nuance) feature application shall limit the connected voice (Nuance)'s service provider's access to information as outlined in the Nuance specification.

3.5.2.3 CCOIv2-REQ-362765/A-Analytics

3.5.2.3.1 CCOIv2-REQ-362766/A-Diagnostics

If the bAllow for entity Diagnostics (ID 46, Type 1) is disabled the CCSOnBoardPolicyClient shall not collect or share diagnostic related information with the Ford backend.
If the bAllow for entity Diagnostics (ID 46, Type 1) is enabled the CCSOnBoardPolicyClient is allowed to collect and share diagnostic related information with the Ford backend.

Note 1: For the data elements that are allowed to be collected see the Analytics specification.

Note 2: the impact of other privacy settings (e.g. vehicle data sharing) on the enablement of the feature is handled through REQ-296883-Dependency on Policy Table Extension.

3.5.2.3.2 CCOIv2-REQ-362768/A-Vehicle Analytics

If the bAllow for entity Analytics (ID 45, Type 1) is disabled the CCSOnBoardPolicyClient shall not collect or share vehicle analytics related information with the Ford backend.
If the bAllow for entity Analytics (ID 45, Type 1) is enabled the CCSOnBoardPolicyClient is allowed to collect and share vehicle analytics related information with the Ford backend.

Note: For the data elements that are allowed to be collected see the Analytics specification.

3.5.2.3.3 CCOIv2-REQ-362770/A-Voice Recognition Feedback

If the bAllow for entity FEATURE72 (ID 72, Type 1) is disabled the CCSOnBoardPolicyClient shall not collect or share voice recognition feedback or failed voice command related information with the Ford backend.
If the bAllow for entity FEATURE72 (ID 72, Type 1) is enabled the CCSOnBoardPolicyClient is allowed to collect or share voice recognition feedback or failed voice command related information with the Ford backend.

Note 1: For the data elements that are allowed to be collected see the Analytics specification.

Note 2: the impact of other privacy settings (e.g. vehicle data sharing) on the enablement of the feature is handled through REQ-296883-Dependency on Policy Table Extension.

3.5.2.3.4 CCOIv2-REQ-362771/A-Media Analytics

If the bAllow for entity RadioAnalytics (ID 49, Type 1) is disabled the CCSOnBoardPolicyClient shall not collect or share media usage or radio listening analytics related information with the Ford backend.
If the bAllow for entity RadioAnalytics (ID 49, Type 1) is enabled the CCSOnBoardPolicyClient is allowed to collect or share media usage or radio listening analytics related information with the Ford backend.

Note 1: For the data elements that are allowed to be collected see the Analytics specification.

Note 2: the impact of other privacy settings (e.g. vehicle location sharing) on the enablement of the feature is handled through REQ-296883-Dependency on Policy Table Extension.

3.5.2.4   CCOIv2-REQ-362776/A-Sirius XM 360L

If the bAllow for entity SiriusXM (ID 12, Type 1) is disabled the Sirius XM feature application shall turn the connection to the Sirius XM 360L service provider's backend off.

If the bAllow for entity SiriusXM (ID 12, Type 1) is enabled the Sirius XM feature application is allowed to turn the connection to the Sirius XM 360L service provider's backend on.

Note: the impact of other privacy settings (e.g. vehicle connectivity) on the enablement of the feature is handled through REQ-296883-Dependency on Policy Table Extension.

3.5.2.4.1   REQ-362949/A-Sirius XM 360L - Restricted Data

The SiriusXM feature application shall limit the Sirius service provider's access to information as outlined in the Nuance specification.

3.5.2.5   CCOIv2-REQ-362777/A-Digital Owners Manual

If the bAllow for entity VehicleConnectivity (ID 1, Type 0) is enabled the Digital Owner's Manual feature application is allowed to stream videos from the Ford backend for the Digital Owner's Manual.

Note: If the bAllow for entity VehicleConnectivity (ID 1, Type 0) is disabled the Digital Owner's Manual is not able to stream videos from the Ford backend as connectivity is disabled.

3.5.2.6   CCOIv2-REQ-362778/A-Rocket Setup

If the bAllow for entity VehicleConnectivity (ID 1, Type 0) is enabled the Rocket Setup feature application is allowed to pre-set vehicle settings in the vehicle from the Ford backend for rocket setup.

3.5.2.7   CCOIv2-REQ-362805/A-Mobile Phone Interface Not Affected by CCS Entity Settings

The CCSOnBoardPolicyClient shall grant the following features, which may be connected via the connection of the driver's mobile devices, access to vehicle information for off board sharing independent of the CCS Entity Settings.

- Android Auto
- Apple Carplay
- Applink

Rationale: These features have their own privacy settings that are managed independent of the CCS settings. Customers are informed that these settings are not affected in the info icons for the CCS settings.

3.5.2.8   CCOIv2-REQ-362779/A-Block All Connections for Not Listed Features

The CCSOnBoardPolicyClient shall block all off board connections for feature applications on the CCSOnBoardPolicyClient, which are not listed in REQ-362747-Policy Enforcement (Client).

3.6 CCOIv2-FUN-REQ-296182/A-CCS settings menu

3.6.1 Use Cases

3.6.1.1 CCOIv2-UC-REQ-296183/B-show CCS settings menu

Actors	User, CCS Client
Pre-conditions	IGN On
Scenario Description	1. User enters CCS settings menu.
Post-conditions	The CCS menu is presented to the user based on the current entity settings and the currently active policy files.
List of Exception Use Cases	E1: 1a) CCS System is not synchronized .1 CCS menu is not accessible, error message will be shown
Interfaces	GUI

3.6.1.2 CCOIv2-UC-REQ-296184/B-check entity settings

Actors	Driver, CCS Client
Pre-conditions	IGN On
Scenario Description	1. Driver enters CCS menu 2. An entity allow bit changes (e.g. due to a change of an entity setting by the user) 3. the menu has to be updated according to the policy file and requirements
Post-conditions	Settings menu is updated.
List of Exception Use Cases	E1: 1a) CCS System is not synchronized .1 CCS menu is not accessible, error message is shown
Interfaces	GUI

3.6.2 Requirements

3.6.2.1 CCOIv2-REQ-296878/B-Building Connectivity Settings menu

The connectivity settings menu shall be dynamically displayed based on the Policy Table rules from the PTE and CFM file. Ref. REQ-292436 Policy Table Definition for applicable rulesets.

3.6.2.2 CCOIv2-REQ-296192/B-Driver Restrictions SPSS dependencies

The Customer Connectivity Settings may be affected by regional Driver Restrictions Settings. Please See Driver Restrictions Settings SPSS and the HMI Specification for details.

3.6.2.3 CCOIv2-REQ-296875/A-Setting Update Reflection

When there is no ongoing HMI task to change a user setting, the settings menu shall always use the values provided during the last successful synchronization procedure by the OnBoardPolicyServer for display.

3.6.2.4 CCOIv2-REQ-296876/B-Visual Feedback based on Settings and Policy Table Extension

If an entity is shown based on PTE section logic "menuPolices", it shall be displayed or not displayed according to the following rules:

Input			Effect				
bPAllow	**bFPAllow**	**bSAllow**	**Entry Visible**	**Entry Layout**	**Switch changeable**	**Switch layout**	**Switch position**
OFF	Don't care	Don't care	NO	n/a	n/a	n/a	n/a
ON	ON	OFF	YES	solid	NO	locked	OFF
ON	ON	ON	YES	solid	NO	locked	ON
ON	OFF	OFF	YES	greyed out	NO	greyed out	OFF
ON	OFF	ON	YES	solid	YES	solid	Per UAllow

If an entity is not shown based on PTE section logic "menuPolices", it shall be invisible independent of entity bit values.

3.7 CCOIv2-FUN-REQ-362370/A-Policy Table Definition (Client)

3.7.1 Use Cases

3.7.1.1 CCOIv2-UC-REQ-296178/B-parse Policy Files

Actors	CCS OnBoardPolicyClient, CCS OnBoardPolicyServer
Pre-conditions	Policy File parsing component (CCS Server or Client) running, valid policy table set available
Scenario Description	CCS component parses policy files to provide all necessary information to show the CCS settings menu, CCS associated Pop-Up, CCS related wording (CCS OnBoardPolicyClient), or to apply EntityDefinitions or SCF content (CCS OnBoardPolicyServer)
Post-conditions	CCS related wordings and structures are available for the HMI, CCS rules are applied by CCS OnBoardPolicyServer
List of Exception Use Cases	E1: CCS Policy files do not contain valid combination of entities and available wordings.
Interfaces	GUI

3.7.2 Requirements

3.7.2.1 CCOIv2-REQ-296414/D-Policy Tables

Policy Tables define a dynamically configurable part of the CCS feature. These tables are generated on Ford Backend side based on rules defined in the ARMR backend component (CCSOffBoardPolicyClient).

There shall be a set of default policy tables stored on the CCS Server. It shall be used, as long as no updates were received via OffBoardSynchronization from the CCSOffBoardPolicyClient.

In general, there are 3 different policy files.

Customer Friendly Messages (CFM)
The "Customer Friendly Messages" file contains wording for almost any CCS related screen. There are different CFM files with content depending on screen size and language. The CCS server shall store CFM default files for any possible combination of screen size and language.
Updates of CFM can be transferred from the CCSOffBoardPolicyClient per off board synchronization process

Common Policy Table Extension (Common PTE)
The "Common Policy Table Extension" file contains an entity-dependent logic, defining the behavior of CCS, e.g. visibility of menu entries, information sharing icon logic or the effect of accepting/declining CCS activation/authorization pop-ups. These rules shall be applied by the CCS OnBoardPolicyClient.
The PTE also contains a default set of entities, their default opt-in values and their inter-dependencies on other entities. These rules shall be applied by the CCS OnBoardPolicyServer.
Updates of Common PTE can be transferred from the CCSOffBoardPolicyClient per off board synchronization process.

Service Config File (SCF)
The "Service Config File" contains the logic, which kind of information shall be assigned to a CCS Entity. It may include CAN signals, primitives or even entire applications. Based on the SCF and the actual CCS entity settings, the CCS OnBoardPolicyServer creates a blacklist of signals, primitives and applications, which need to be blocked. This information is published to, and applied by the Policy Enforcer implementing modules.

3.7.2.2 CCOIv2-REQ-328986/A-Policy File compression

The payload data for transmission of policy files transferred via the off board synchronization process shall be GZIP decompressed by the responsible CCS component.

3.7.2.3   CCOIv2-REQ-362371/A-Persistent Storage and Hashing

CCS OnBoardPolicyClient shall store CCOI data persistently across power states. To protect against inconsistency, in Synchronization state "Waiting" the stored information shall be checked against attached hash values before using it.

3.7.2.3.1   CCOIv2-REQ-362372/A-Failed Client Consistency Check

Upon reading stored information and failing the hash based consistency check, CCS OnBoardPolicyClient shall proceed to Synchronization state "SynchronizationNeeded" and shall set the Policy Table Minor Version in SynchronizationSession_Rq to zero for the OnBoardSynchronization Process.

3.7.2.4   CCOIv2-REQ-296368/C-User Friendly Messages variables

User Friendly Messages strings may contain variables.

Variables dependent on make:
Variable name: %modemName%
Ford: Refer to CCOIv2-REQ-328981 - ford_modemName
Lincoln: Refer to CCOIv2-REQ-328982 - lincoln_modemName

Variable name: %appName%
Ford: Refer to CCOIv2-REQ-328977 - ford_app
Lincoln: Refer to CCOIv2-REQ-328978 - lincoln_app

Variable name: %vehicleMake%
Ford: Refer to CCOIv2-REQ-328979 - ford_brand
Lincoln: Refer to CCOIv2-REQ-328980 - lincoln_brand

Variables received from CCSOnBoardPolicyServer through SpcmCcsmUserPromptReq:
Variable name: %sText1% – received via SpcmCcsmUserPromptReq: variableText1
Variable name: %sText2% – received via SpcmCcsmUserPromptReq: variableText2

Variables for subscription end dates:
Variable name: %expirationDate%
Refer to CCOIv2-REQ-328948 - featureSubscriptions. Depending on the message code the variable is used in, the expiration date with the matching entityID/type needs to be shown.

3.7.2.5   Policy Table Extension content definition

3.7.2.5.1   General explanations

3.7.2.5.1.1   CCOIv2-REQ-318822/C-unique identifier

A CCS entity shall be uniquely identifiable. Currently there are two unique identifiers:

1) FeatureCode
OR
2) Combination of entityType and entityID

Each entity has an optional label commentEntityName.

Rationale: There are two unique identifiers because of legacy architecture on the CCS CCSOffBoardPolicyClient. The CCSOffBoardPolicyClient will store entity changes based on the combination of entityType and entityID.
Applications shall be able to read a specific entity setting via CCS API either by referencing entity type and ID OR by referencing the FeatureCode.

3.7.2.5.1.2   CCOIv2-REQ-318821/A-EntityType

Valid entity types are
- 0 – META
- 1 – FEATURE

- 2 – FUNCTION

3.7.2.5.1.3   CCOIv2-REQ-328930/A-priority

Defines which policy takes precedence. The lower the number, the higher the priority. When conditions are met for multiple policies with conflicting effects only the highest priority (lowest numbered entry) shall apply.

If no priority is specified all applicable policies shall be applied.

3.7.2.5.1.4   CCOIv2-REQ-318823/C-regions

regions allows regional control over what policy shall apply. See REQ-328928 - regionDefinitions for the definition of regions in the PTE. If regions is "default", that policy targets all regions, which are not assigned explicitly. The considered policy of that category subset shall be filtered to regions matching the configured region or all regions ("default"). This list is then selected based on the priority of policies in the subset, per REQ-328930 - priority.

3.7.2.5.1.5   CCOIv2-REQ-328931/A-conditions

The effects of a policy must pass an additional check if the policies conditions do not equal "null". The conditions calls out the policy to check via the unique identifiers (ref. REQ-318822), which reference a particular Allow bit. The value to check against is given in the parameter entityBitSetting (ref. REQ-328989). Multiple conditions may be defined. For a specific policy with one or more defined conditions, all the conditions must evaluate to true, in order to execute the given effects list. Hence when multiple conditions are listed, the result is in effect a boolean AND operation of the results for each list item.

3.7.2.5.1.6   CCOIv2-REQ-328989/A-entityBitSetting

The entityBitSetting evaluates whether a specific allow bit is TRUE or FALSE.

The set of entityBitSetting states are defined in REQ-329000.

Example:

If the entityBitSetting is "bPAllow_On" then the effects shall be applied if the bPAllow for the specified entity is TRUE.

3.7.2.5.1.7   CCOIv2-REQ-329000/A-entity bit states

The entity states are:
bPAllow_On
bPAllow_Off
bFPAllow_On
bFPAllow_Off
bSAllow_On
bSAllow_Off
bUAllow_On
bUAllow_Off
bAllow_On
bAllow_Off

3.7.2.5.1.8   CCOIv2-REQ-328932/A-effects

The effects shall only be applied, if the conditions are met or there are no conditions specified. Multiple effects entries may be specified.

3.7.2.5.1.9   CCOIv2-REQ-328922/A-messageCode (Policy Table Extension)

messageCode is a reference to the CFM files and contains the wordings for the entity for example confirmation prompts, menu entries, or pop-up wordings. For an explanation of all wording parameters, refer to section "User Friendly Messages content definition".

3.7.2.5.1.10   CCOIv2-REQ-329002/A-action

The action sets the value for a specific allow bit of the specified entity to TRUE or FALSE.

The set of action states are defined in REQ-329000:

Example:

If the action is "bPAllow_On" then the bPAllow for the specified entity shall be set to TRUE.

3.7.2.5.2   CCOIv2-REQ-329003/B-header

The header section of the PTE file consists of the parameters „PlatformVersion", „MajorVersion", „ARMRMinorVersion" and „APCAMinorVersion". These parameters are for troubleshooting only and shall not be parsed by the CCS System.

3.7.2.5.3   CCSEntityDefinitions

The section Entity Definitions contains information about the entity rules. In particular, it contains information such as default entity settings and the dependencies on other entities.

3.7.2.5.3.1   CCOIv2-REQ-329004/B-DefaultEntitySettingPolicies

The default bUAllow values and the bFPAllow values are stored in the the DefaultEntitySettingPolicies. The policy is based on a priority (REQ-328930), a region (REQ-318823).

3.7.2.5.3.2   CCOIv2-REQ-329005/A-DefaultEntityLifecycleModeSettings

Defines the default values for the allow bit settings for bUAllow and bFPAllow depending on the life cycle modes. DefaultEntityLifecycleModeSettings is a special variant of effects (ref. REQ-328932) to set the default values for the entity bits.

The life cycle mode based entity default parameters are:
bUAllow_normal
bUAllow_factory
bUAllow_transport
bFPAllow_normal
bFPAllow_factory
bFPAllow_transport

If the value is 1, then the default value shall be set to TRUE.
If the value is 0, then the default value shall be set to FALSE.

Normal, factory, and transport reference the lifecycle mode of the vehicle.

Example:
If the DefaultEntityLifecycleModeSettings reads as '"bUAllow_normal": 1', then the default value of the bUAllow bit for specified entity shall be set to TRUE when the vehicle enters the lifecycle mode normal.

3.7.2.5.3.3   CCOIv2-REQ-329007/C-dependencies

If the trigger conditions to apply the dependencies are met (REQ-296883-Dependency on Policy Table Extension), the CCSOnboardPolicyServer shall check whether the conditions for entityBitSetting of the changed entity are met:

- If any entityBitSetting conditions for the changed entity are met the CCSOnboardPolicyServer shall apply the effects with the included action. The effects of other entities changed in line with these dependencies shall be applied as well.
- If an entityBitSetting condition is not met for the changed entity the CCSOnboardPolicyServer shall not apply the effects that correspond to this condition.

For conditions see REQ-328931
For entityBitSetting see REQ-328989
For effects see REQ-328932
For action see REQ-329002

3.7.2.5.3.4   CCOIv2-REQ-362720/A-Dependency Execution

The CCSOnboardPolicyServer shall apply the entity dependencies from REQ-329007-dependencies in order of appearance in the policy file according to the depth-first approach.

3.7.2.5.4   CCSFeaturePolicies

The section Feature Policies contains information about the HMI and effects within CCS. For example, what should happen when the user selects a certain answer possibility to a user prompt, the menu entries, and feature subscriptions.

3.7.2.5.4.1   CCOIv2-REQ-328921/B-promptPolicies

promptPolicies Parameter specifies the effects for each user's decision on UserPrompt Pop-ups of type initialPrompt (i.e. "Yes", "No"). A user prompt's text is defined by the messageCode (REQ-328949) and has a label commentMessageName. If the CCSOnBoardPolicyServer receives the notification from the CCSOnBoardPolicyClient that the driver selected a userAction (REQ-296292-Effects of Accepting or Declining a UserPrompt) and conditions as well as region criteria are met, then the CCSOnBoardPolicyServer shall apply the corresponding effects with the included action.

For userAction see REQ-328925
For effects see REQ-328932
For action see REQ-329002
For conditions see REQ-328931
For regions see REQ-318823

3.7.2.5.4.1.1   CCOIv2-REQ-328925/B-userActions

userActions paramater specifies the decisions made by the driver:
- If the CCSOnBoardPolicyServer receives a SpcmCcsmUserPromptResp from the CCSOnBoardPolicyClient with promptResult = "SPCM_CCSM_PROMPT_RESULT_SELECT_YES" the userAction is "affirmative".
- If the CCSOnBoardPolicyServer received a SpcmCcsmUserPromptResp from the CCSOnBoardPolicyClient with promptResult = "SPCM_CCSM_PROMPT_RESULT_SELECT_NO" the userAction is "affirmative".

3.7.2.5.4.2   CCOIv2-REQ-328928/A-regionDefinitions

regionDefinitions parameters used in the menu policies to allow for regionalized policies.
The countries shall be mapped to regions (ref. REQ-318823) as defined in this section of the PTE. If the vehicle's configured country is not part of any defined region or there is no policy assigned to it's region, the policies of the "default" region shall be applied.

3.7.2.5.4.3   CCOIv2-REQ-328933/A-menuPolicies

menuPolicies specifies which entities (i.e. features, functions, and meta settings) that are specified by the messageCode shall be displayed under the given conditions for the specified regions. Each menu policy has a label commentMenuPolicyName.

3.7.2.5.4.3.1   CCOIv2-REQ-328936/A-showInMenu

menuPolicies defines in which place the entities shall be displayed. There are three possibilities:

- showInConnectivitySettingsMenu: the entities shall be displayed in the placeholder from the HMI specification for the CCS Connectivity Settings
- showInMetaSettingsMenu: the entities shall be displayed in the placeholder from the HMI specification for the CCS Meta Settings
- showInFeatureSettingsMenu: the entities shall be displayed in the placeholder from the HMI specification for the CCS Feature Settings

3.7.2.5.4.3.2   CCOIv2-REQ-328937/A-sequencenumber

sequence specifies the order in which entities should be displayed in the specific placeholder. The lower the number, the higher the position in the menu. The lowest sequence is listed as the first entity in the placeholder.
When the sequence for two or more entities is the same for a given placeholder, they shall be ordered alphabetically.

Note: A sequence may or may not be consecutive (example the sequence of several entities may be: {3,4,5,1000,1000}).

3.7.2.5.4.3.3   CCOIv2-REQ-328945/A-optInSwitch

optInSwitch shall determine whether a switch is required for that entity in Connectivity Menu. If it is true, show the switch, if not do not show the switch.

3.7.2.5.4.4   CCOIv2-REQ-328939/B-iconRules

iconRules determines whether to display the sharing icon in applicable contexts, such as the status bar and to display the data sharing Pop-Up 23.
The icons and the wordings as specified by the messageCode, shall be displayed according to the pop-up's priority under the specified conditions about the entityBitSetting.

3.7.2.5.4.5   CCOIv2-REQ-328948/A-featureSubscriptions

featureSubscriptions parameter contains subscriptionExpirationDate, the expiration date and time corresponding to the defined entities. Various CFM wordings may references this value via the variable name %expirationDate%; see CFM sections for more details.

3.7.2.6   User Friendly Messages content definition

3.7.2.6.1   CCOIv2-REQ-362575/A-header

The header section of the CFM file consists of the parameters „PlatformVersion", „MajorVersion" and „MinorVersion". These parameters are for troubleshooting only and shall not be parsed by the CCS System.

3.7.2.6.2   CCOIv2-REQ-328949/B-messageCode (User Friendly Messages)

The message code is a unique reference which is used to determine which text is used to populate a specific screen/pop-up/prompt. It is also a link between the policy file and the customer friendly messages file (ref. REQ-328922). PopUps triggered via UserPrompt_Rq contain the "ScreenID" value which matches the message code.

3.7.2.6.3   CCOIv2-REQ-328950/A-displaySize

The text displayed shall be dependent on the display size (example: largeDisplay, smallDisplay).

3.7.2.6.4   CCOIv2-REQ-328951/A-languages

The language-country combination determines the language to be displayed. ISO 639-1 combined with ISO 3166 alpha-2 country code. Example: "en-us", "de-de".

3.7.2.6.5   CCOIv2-REQ-328952/A-promptType

There shall be 5 prompt types (initial prompt, menu, menu consent prompt, error, information) to populate the content of the screens/pop-ups/prompts. There shall be 6 additional prompt types (brand, app and modemName) that shall populate variable names in the screens/pop-ups/consent prompts/errors/information.

3.7.2.6.5.1   CCOIv2-REQ-328953/B-initalPrompt

initalPrompt shall populate the wordings for user prompt pop-ups of promptType "SPCM_CCSM_PROMPT_TYPE_INITIAL_PROMPT", the corresponding confirmation prompts, and info books.

3.7.2.6.5.1.1   CCOIv2-REQ-329016/A-textBody

The text body of the pop-up shall be populated with this string.

3.7.2.6.5.1.2   CCOIv2-REQ-328959/A-infoText

The text body of pop-up H31c (infoIcon) shall be populated with this string.

3.7.2.6.5.1.3   CCOIv2-REQ-328960/A-button1ConfirmationText

The text body of confirmation "affirmative" pop-up (e.g. user clicked "Yes" button in activation pop-up) shall be populated with this string.

3.7.2.6.5.1.4   CCOIv2-REQ-328961/A-button2ConfirmationText

The text body of decline "negative" pop-up (e.g. user clicked "No" button in activation pop-up) shall be populated with this string.

3.7.2.6.5.2   CCOIv2-REQ-328962/B-menu

menu shall populate the wordings for menu entries as well as the corresponding confirmation prompts, sharing pop-ups, and info books.

3.7.2.6.5.2.1 CCOIv2-REQ-328963/A-settingsMenuText

The menu entry in the respective menu section for the entity corresponding to this messageCode shall be populated with this string.

For the respective menu section see REQ-328936 - menuPolicies: showInConnectivitySettingsMenu, showInMetaSettingsMenu, and showInFeatureSettingsMenu

3.7.2.6.5.2.2 CCOIv2-REQ-328964/A-infoText_subscribed_unlocked

If bSAllow == true AND bFPAllow == false, then the text body of pop-up (infoIcon) shall be populated with this string.

3.7.2.6.5.2.3 CCOIv2-REQ-328965/A-infoText_unsubscribed_unlocked

If bSAllow == false AND bFPAllow == false, then the text body of pop-up infoIcon shall be populated with this string.

3.7.2.6.5.2.4 CCOIv2-REQ-329017/A-infoText_subscribed_locked

If bSAllow == true AND bFPAllow == true, then the text body of pop-up infoIcon shall be populated with this string.

3.7.2.6.5.2.5 CCOIv2-REQ-329018/B-infoText_unsubscribed_locked

If bSAllow == false AND bFPAllow == true, then the text body of pop-up infoIcon shall be populated with this string.

3.7.2.6.5.2.6 CCOIv2-REQ-328966/A-data_sharing_popup

The text body of the data sharing reminder pop-up shall be populated with this string.

3.7.2.6.5.3 CCOIv2-REQ-328968/A-menuConsentPrompt

menuConsentPrompt shall populate the wordings for menu consent prompts displayed to the user when enabling or disabling a CCS entity via menu.

3.7.2.6.5.3.1 CCOIv2-REQ-328969/A-textBody

If entity transition to ON requested (bUAllow == true) via menu, the text body of consent prompt Pop-Up shall be populated with this string.

3.7.2.6.5.3.2 CCOIv2-REQ-328970/A-confirmation_off

If entity transition to OFF requested (bUAllow == false) via menu, the text body of the consent prompt Pop-Up shall be populated with this string.

3.7.2.6.5.3.3 CCOIv2-REQ-328971/A-Special confirmation prompts for Vehicle Connectivity Entity

In the special case when transition to OFF requested (bUAllow == false) via menu for entity VehicleConnectivity (Id = 1, Type = 0), the following table shall determine the prompt text:

If conditions apply:		Then populate menu consent prompt with text:	Requirement reference
LBI	IVSU		
		confirmation_off	REQ-328970-confirmation_off
x		confirmation_off_plusLBI	REQ-328973-confirmation_off_plusLBI
	x	confirmation_off_plusIVSU	REQ-328972-confirmation_off_plusIVSU
x	x	confirmation_off_plusLBI_IVSU	REQ-328974-confirmation_off_plusLBI_IVSU

3.7.2.6.5.3.3.1 CCOIv2-REQ-328972/A-confirmation_off_plusIVSU

If the following conditions apply:
1) entity transition to OFF requested (bUAllow == false) via menu for entity VehicleConnectivity (Id = 1, Type = 0)
AND
2) an IVSU package is downloaded or currently installed

then the text body of the consent prompt Pop-Up shall be populated with the text from confirmation_off_plusIVSU.

3.7.2.6.5.3.3.2 CCOIv2-REQ-328973/A-confirmation_off_plusLBI

If the following conditions apply:

   1) entity transition to OFF requested (bUAllow == false) via menu for entity VehicleConnectivity (Id = 1, Type = 0)
AND
   2) PaaK Backup Starting Passcode (previously called LBI - Lincoln Backup Ignition) is enabled

then the text body of the consent prompt Pop-Up shall be populated with the text from confirmation_off_plusLBI.

3.7.2.6.5.3.3.3 CCOIv2-REQ-328974/A-confirmation_off_plusLBI_IVSU

If the following conditions apply:

1) entity transition to OFF requested (bUAllow == false) via menu for entity VehicleConnectivity (Id = 1, Type = 0)
AND
2) PaaK Backup Starting Passcode (previously called LBI - Lincoln Backup Ignition) is enabled
AND
3) an IVSU package is downloaded or currently installed

then the text body of the consent prompt Pop-Up shall be populated with the text from confirmation_off_plusLBI_IVSU.

3.7.2.6.5.4   CCOIv2-REQ-328975/B-error

error shall populate the wordings for error state pop-ups of promptType "SPCM_CCSM_PROMPT_TYPE_ERROR" to inform the user about the potential cause for an error.

3.7.2.6.5.4.1   CCOIv2-REQ-328976/A-textBody

The text body of the Error Pop-Up shall be populated with this string.

3.7.2.6.5.5   CCOIv2-REQ-329020/B-information

information shall populate the wordings for info pop-ups of promptType "SPCM_CCSM_PROMPT_TYPE_INFORMATION" to inform the user.

3.7.2.6.5.5.1   CCOIv2-REQ-329133/A-textBody

The text body of the information Pop-Up shall be populated with this string.

3.7.2.6.6   CCOIv2-REQ-328977/A-ford_app

For Ford vehicles, the textBody field contains the string, which shall be populated for the %appName% variable.

3.7.2.6.7   CCOIv2-REQ-328978/A-lincoln_app

For Lincoln vehicles, the textBody field contains the string, which shall be populated for the %appName% variable.

3.7.2.6.8   CCOIv2-REQ-328979/A-ford_brand

For Ford vehicles, the textBody field contains the string, which shall be populated for the %vehicleMake% variable.

3.7.2.6.9   CCOIv2-REQ-328980/A-lincoln_brand

For Lincoln vehicles, the textBody field contains the string, which shall be populated in the %vehicleMake% variable.

3.7.2.6.10 CCOIv2-REQ-328981/A-ford_modemName

For Ford vehicles, the string in the textBody field shall be populated for the %modemName% variable.

3.7.2.6.11 CCOIv2-REQ-328982/A-lincoln_modemName

For Lincoln vehicles, the textBody field contains the string, which shall be populated in the %modemName% variable.

3.7.2.6.12 CCOIv2-REQ-328983/A-Missing content strategy

If not a single dynamic text field (e.g. button1ConfirmationText AND button1ConfirmationTextHeader) on a specific Pop-Up/Info-Book is populated do not show the corresponding Pop-Up/Info-Book pop-up and icon.

If at least one dynamic text field (e.g. initialPrompt: textBody, textBodyHeader) on a specific Pop-Up/Info-Book is populated show the corresponding Pop-Up/Info-Book pop-up and icon.

3.7.2.6.13 CCOIv2-REQ-328984/A-Pop-Up and Info-Book text no truncation

The Pop-Up and Info-Book texts defined in the UFM shall not be truncated to fit into the assigned Pop-Ups (all languages). Therefore it is necessary to dynamically add scroll bars when the text content exceeds the defined pop-up size.

3.7.2.6.14 CCOIv2-REQ-329135/A-pop-up headers (CFM)

All pop-up and screen wordings with the exception of settingsMenuText shall have a parameter "..Header" to populate the wordings for the header of that pop-up and screen.

Examples:
textBody has the corresponding textBodyHeader
infoText has the corresponding infoTextHeader

3.8 CCOIv2-FUN-REQ-296179/B-Notification of data and location sharing

3.8.1 Use Cases

3.8.1.1 CCOIv2-UC-REQ-296180/C-show data sharing reminder

Actors	Driver, CCSOnBoardPolicyClient
Pre-conditions	IGN On, CCSOnBoardPolicyClient running
Scenario Description	An entity is active that per policy table requires data and/or location sharing reminder.
Post-conditions	The CCSOnBoardPolicyClient showed a data/location sharing reminder to the driver to inform about the currently shared data/location.
List of Exception Use Cases	
Interfaces	GUI

3.8.1.2 CCOIv2-UC-REQ-296181/D-show data sharing reminder Pop-Up

Linked Elements
CCOI-ACT-REQ-351857/A-User identification via paired/connected device for data sharing reminder Pop-Up

Actors	CCSOnBoardPolicyClient, Driver
Pre-conditions	IGN off,
Scenario Description	1. Driver turns IGN on. 2. CCSOnBoardPolicyClient finishes synchronization. 3. An entity, which per policy file requires showing data/location sharing reminder, is active. 4. CCSOnBoardPolicyClient checks, if the popup has already been shown to the specific driver once.
Post-conditions	A data/location sharing Pop-Up is shown once to remind the driver that data is currently shared. If a device is paired the device will be saved as a device that already saw the data sharing reminder.
List of Exception Use Cases	E1: With the current personal device paired, the data/location sharing Pop-Up was already shown. The Pop-Up will not be shown again.
Interfaces	GUI

3.8.2 Requirements

3.8.2.1 CCOIv2-REQ-362633/A-Data/Location sharing reminder

There are four different icons for data and location sharing indication:
1) No sharing
2) Data sharing only
3) Location sharing only
4) Location and Data sharing

The conditions for showing data/location sharing reminder icons are defined in the PTE file.
See CCOIv2-REQ-328939 - iconRules for further information.
For applicable Icons see applicable HMI specification H31j, box "Sharing Status Icon".

3.8.2.2 CCOIv2-REQ-362913/A-Data/Location sharing reminder in error state

If

OnBoardPolicyServer_St == UnrecoverableSynchronizationError
OR

OnBoardPolicyServer_St == DataStorageError

then the CCSOnBoardPolicyClient shall not display any data/location sharing icon (ref. REQ-362633-Data/Location sharing reminder).

3.8.2.3   CCOIv2-REQ-362914/A-Maintaining an acknowledged device list
The CCSOnBoardPolicyClient shall maintain a list of acknowledged devices.

3.8.2.4   CCOIv2-REQ-362915/A-Definition of acknowledged devices
An acknowledged device is a device, which was connected to the IVI-System while the data/location sharing reminder was presented to the user and has been acknowledged or timed out.

3.8.2.5   CCOIv2-REQ-362916/A-Definition of devices
Devices currently in scope are devices connected via Bluetooth, Wifi or USB (e.g. Projection Mode).

3.8.2.5.1   CCOIv2-REQ-362917/A-USB devices which can get flagged as an acknowledged device
Only devices, which are stored in Projection Mode device lists (e.g. CarPlay, AndroidAuto), are capable to be flagged as an acknowledged USB device.

3.8.2.5.2   CCOIv2-REQ-362918/A-USB devices cannot get flagged as an acknowledged device
Mass storage devices (such as USB-Pendrives or harddrives) and charging only devices cannot be flagged as acknowledged devices.

3.8.2.6   CCOIv2-REQ-362919/A-Waiting for Bluetooth and USB initialization on triggering Data Location Sharing reminder
Before evaluating the connection of a device via USB, Wifi, or Bluetooth the CCSOnBoardPolicyClient shall wait until the Bluetooth, Wifi, and USB connections are initialized.

3.8.2.7   CCOIv2-REQ-362920/A-Do not save devices when screen is deactivated
If the display is deactivated, (e.g. user turned off display immediately after IGN) the CCSOnBoardPolicyClient shall not save the device as an acknowledged device.

Rationale: since the pop-up will time out while the screen is off the driver cannot see the pop-up.

3.8.2.8   CCOIv2-REQ-362921/A-Do not show data/location sharing reminder if acknowledged device is connected
If an already acknowledged device is connected to IVI-System the CCSOnBoardPolicyClient shall not show the data/location sharing reminder pop-up again.

3.8.2.9   CCOIv2-REQ-362922/A-Remove acknowledged devices from list on Reset
If the driver performs a reset (master/brand connect) the CCSOnBoardPolicyClient shall remove all acknowledged devices from the list.

Hint: Clear user setting command was not mentioned since the CCSOnBoardPolicyClient is not notified about it.

3.8.2.10 CCOIv2-TMR-REQ-362923/A-CCOI_MaxBTDeviceSearchTimeout

Name	Description	Units	Range	Resolution	Default
CCOI_MaxBTDeviceSearchTimeout	Maximum time to wait for a Bluetooth reconnect	sec	-	1	120

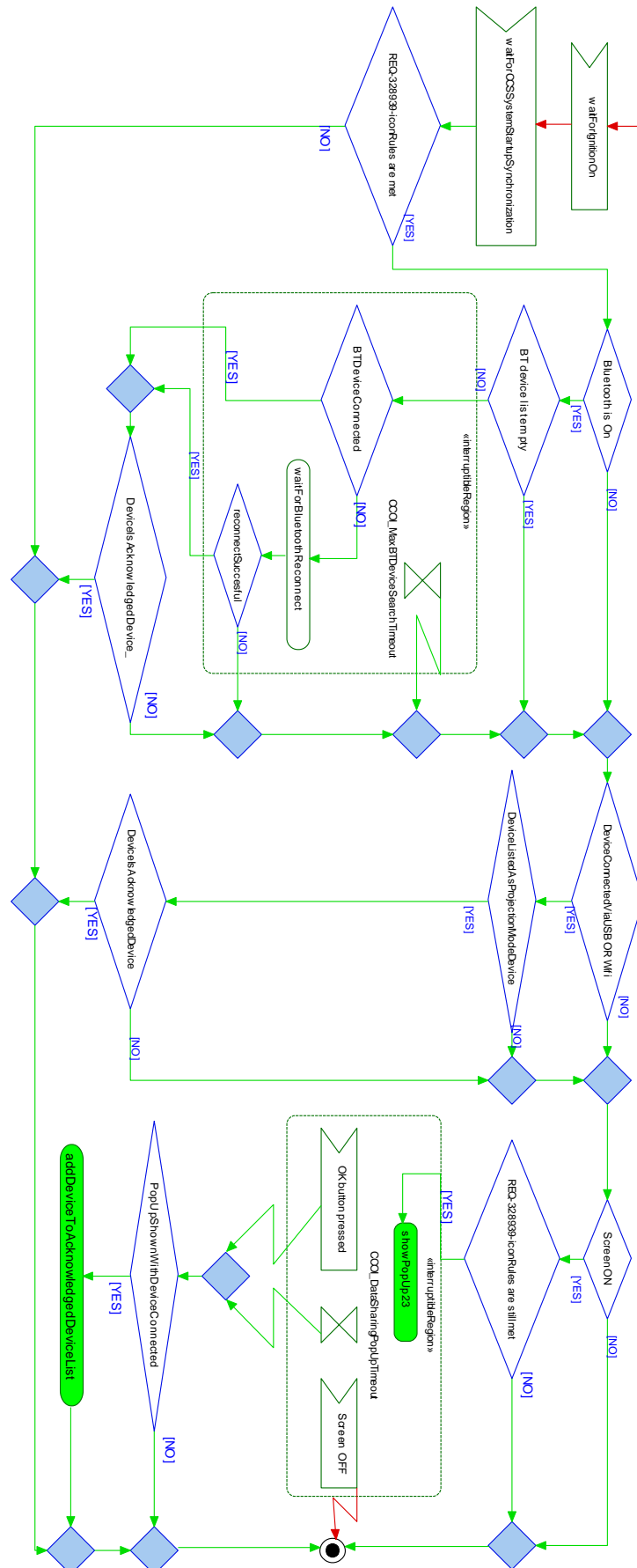### *3.8.2.11 CCOIv2-TMR-REQ-362924/A-CCOI_DataSharingPopUpTimeout*

Name	Description	Units	Range	Resolution	Default
CCOI_DataSharingPopUpTimeout	Please see applicable HMI specification H31j for applicable timer.				

3.8.3   Activity Diagrams

3.8.3.1   CCOIv2-ACT-REQ-362930/A-User identification via paired/connected device for data sharing reminder Pop-Up

4   Appendix: Reference Documents

Reference #	Document Title
1	Policy Table Extension
2	Consumer Friendly Messages
3	H31j_SYNC4_Customer_Connectivity_Settings
4	Service Configuration File
5	ECG FINAL FNV2 GCF
6	ecg_spcm_ccsm.proto as "ECG SOA Proto File"
7	fnv_spcm_ccsm_ftcp.proto as "FNV SOA Proto File"
8	sync_spcm_ccsm.proto as "SNYC SOA Proto File"
9	FTCP CCS.proto as "CCS FTCP Proto File"
10	FTCP Authorization.proto as "Authorization FTCP Proto File"