# Research & Vehicle Technology
## "Product Development"

# Feature –
# Customer Connectivity Settings Client

# APIM Infotainment
# Subsystem Part Specific Specification
# (SPSS)

Version 1.4
**UNCONTROLLED COPY IF PRINTED**

**Version Date:  December 12, 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 |

| **December 12, 2019** | **1.4** | **Updated Release** | |
|---|---|---|---|
| | CCOIv2-TBL-683964/B-Glossary | | bhamach3: Clarification for Active Policy File added |
| | CCOIv2-TBL-683966/B-Abbreviations | | bhamach3: VSCS added |
| | CCOIv2-685361/B-Interface Requirements | | mkahlen: added new requirement |
| | CCOIv2-REQ-362876/B-FNV SOA Proto File | | mkahlen: added new subrequirement |
| | CCOIv2-REQ-372144/A-Meta Data: Hash Value Format | | mkahlen: new requirement |
| | 711615/A-Diagnostics Interface | | mkahlen: added new requirements |
| | 711616/A-Method 2 | | mkahlen: added new requirements |
| | CCOIv2-REQ-371613/A-Diagnostic Parameter for Country Code | | mkahlen: included reference to country code DID |
| | CCOIv2-TBL-711791/A-Diagnostic Parameters | | mkahlen: included reference to country code DID |
| | CCOIv2-REQ-371614/A-Diagnostic Parameter for Vehicle Brand | | mkahlen: included reference to vehicle brand DID |
| | CCOIv2-TBL-711792/A-Diagnostic Parameters | | mkahlen: included reference to vehicle brand DID |
| | CCOIv2-REQ-371615/A-Diagnostic Parameter for Backup Start Passcode | | mkahlen: included reference to LBI/BSP DID |
| | CCOIv2-TBL-711793/A-Diagnostic Parameters | | mkahlen: included reference to LBI/BSP DID |
| | CCOIv2-REQ-371616/A-Diagnostic Parameter to Show/Hide CCS Menu | | mkahlen: included reference to hide CCS menu DID |
| | CCOIv2-TBL-711794/A-Diagnostic Parameters | | mkahlen: included reference to hide CCS menu DID |
| | STR-683200/B-Functional Definition | | Mkahlen: merged CCOIv2-FUN-REQ-362638/A-Update Entity Setting (Client) with CCOIv2-REQ-355042/A-OnBoardSynchronization (Client) |
| | CCOIv2-REQ-362707/B-Effects of Driver Selecting Yes | | bhamach3: Merge of File and Settings Synchronization |
| | CCOIv2-REQ-362708/B-Effects of Driver Selecting No | | bhamach3: Merge of File and Settings Synchronization |
| | CCOIv2-REQ-362712/B-Effect of Master Reset | | mkahlen: added a note about clear user settings that SYNC cannot dedect and close the pop-up |
| | CCOIv2-REQ-296283/C-Effect of PTE or UFM Update | | mkahlen: changed the requirement to match the implementation that the policy file transfer does not close a pop-up. If the Client receives an updated policy file with new text, the server does not always know to what text the driver gave consent for. This problem will be separately addressed in change request https://www.jira.ford.com/browse/ECG-40268. |

| CCOIv2-SD-REQ-362647/B-Initial Prompt | bhamach3: Merge of File and Settings Synchronization. Removed scenario where UFM file replacement is handeled separately. |
|---|---|
| CCOIv2-SD-REQ-362648/B-Information and Error Prompt | mkahlen: Merge of File and Settings Synchronization. Removed scenario where UFM file replacement is handeled separately. |
| 669577/B-Use Cases | bhamach3: Merge of File and Settings Synchronization, Deleted REQ-362319 (CCS menu shall not be accessible while OnBoardSynchronization), REQ-362321 (Combined with REQ-362320), REQ-362336 (No prompts triggered when not Synchronized)) |
| CCOIv2-UCD-REQ-371112/A-Update Policy Files | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-UC-REQ-357523/B-Turn ignition on | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-UC-REQ-362912/B-Turn HMI System on | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-UC-REQ-362282/B-Policy File or Entity Settings received from OffBoardPolicyClient | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-UC-REQ-357525/B-Software Update | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-UC-REQ-362320/B-Subscription Change while OnBoardSynchronization | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-UCD-REQ-361932/B-Update Entity Settings | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-UC-REQ-355218/B-Change Consent Setting in Menu | mkahlen: merged file and setting synchronization; updated reference |
| CCOIv2-UC-REQ-355202/B-Configure Entity bSAllow | mkahlen: merged file and setting synchronization; updated reference |
| CCOIv2-UC-REQ-355203/B-Configure Entity bPAllow | mkahlen: merged file and setting synchronization; updated reference |
| CCOIv2-UC-REQ-355208/B-Reset | mkahlen: merged file and setting synchronization; updated reference |
| CCOIv2-UC-REQ-355201/B-Provisioning | mkahlen: merged file and setting synchronization; updated reference |
| CCOIv2-UC-REQ-355204/B-Change Lifecycle Mode | mkahlen: merged file and setting synchronization; updated reference |
| CCOIv2-UC-REQ-355212/B-Restore bUAllow Entity Settings | mkahlen: merged file and setting synchronization; updated reference |
| 669576/B-Requirements (Client) | mkahlen: merged file and setting synchronization. included the requirements from the update entity setting synchronization in this section |
| CCOIv2-TBL-664710/B-State Transition Table | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-REQ-359108/B-Client Hash Check in State Synchronizing | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-REQ-358466/B-Hash Value match | bhamach3: SOA message reference corrected |
| CCOIv2-REQ-371111/A-No Hash Comparison Needed | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-REQ-359109/B-SynchronizationSessionRequest | bhamach3: SOA message reference corrected |
| CCOIv2-REQ-362811/B-Driver Changes a Setting in Menu | mkahlen: merged file and setting synchronization to include transition to onboard update pending before showing the user prompt |
| CCOIv2-REQ-296879/E-Entity toggle switch changed to "on" | mkahlen: merged file and setting synchronization. Updated the case where a driver declines a menu consent prompt to go back to synchronized state |
| CCOIv2-REQ-296880/E-Entity toggle switch changed to "off" | mkahlen: merged file and setting synchronization. Updated the case where a driver declines a menu consent prompt to go back to synchronized state |
| CCOIv2-REQ-362639/B-Client Sends Read Entity Setting Request on Start-up | mkahlen: added new subrequirement |
| CCOIv2-REQ-372235/A-Retry Reading Settings | mkahlen: new requirement |
| CCOIv2-ACT-REQ-362528/B-OnBoardSynchronization | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-STM-REQ-358305/B-OnBoardSynchronization | bhamach3: Merge of File and Settings Synchronization |
| 669578/B-Sequence Diagrams | bhamach3: Merge of File and Settings Synchronization, CCOIv2-SD-REQ-371071 added. Removed CCOIv2-SD-REQ-361331/A-SynchronizationNeeded as it is included in CCOIv2-SD-REQ-358304- |

| | Synchronization. Added the sequence diagrams from the section that was previously entity setting updates. |
|---|---|
| CCOIv2-SD-REQ-358303/B-Power On Sequence | mkahlen: merged file and setting synchronization |
| CCOIv2-SD-REQ-358304/B-Synchronization | mkahlen: merged file and setting synchronization |
| CCOIv2-SD-REQ-361332/B-SynchronizationFailed | mkahlen: merged file and setting synchronization |
| CCOIv2-SD-REQ-362628/B-Distribute Entity Settings and Blacklist | mkahlen: added and blacklist to requirement name. Added loop to send the setting updates within synchronization until a ECU responds to cover cases where the ECG boots up faster than the TCU without having to go through synchronization loops |
| CCOIv2-SD-REQ-371071/A-Queue Synchronization | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-SD-REQ-321292/D-Change Consent Setting in Menu | mkahlen: merged file and setting synchronization. added reference to the que synchronization diagram instead of the entity setting update and included the reference that the client goes in onboardupdatepending when a customer tries to change a setting and goes into synchronized when a customer declines a menu consent prompt |
| CCOIv2-SD-REQ-362624/B-bPAllow or bSAllow Configuration Change | bhamach3: Merge of File and Settings Synchronization |
| CCOIv2-SD-REQ-371654/A-SYNC Swap | mkahlen: new requirement |
| CCOIv2-SD-REQ-362627/B-Apply Dependencies | mkahlen: merged file and setting synchronization. renamed requiremetn from update settings onboard to apply dependencies. Added more details on how the persisint should take place in terms of making a working copy, applying the change, applying the dependencies and when to sent the alert with a reference to the queue synchronization. Also moved the  blacklist calculation to the synchronization. |
| CCOIv2-SD-REQ-371082/A-Reset | mkahlen: initial release |
| CCOIv2-SD-REQ-371084/A-Lifecycle Mode Change | mkahlen: initial release |
| CCOIv2-SD-REQ-362625/B-Provisioning | mkahlen: addition to handle data storage error |
| CCOIv2-SD-REQ-372229/A-SMS Wake Up | mkahlen: new requirement |
| CCOIv2-REQ-329004/C-DefaultEntitySettingPolicies | mkahlen: added note that the country code change only takes effect when default settings are applied |
| CCOIv2-REQ-329005/B-DefaultEntityLifecycleModeSettings | mkahlen: added a reference to the CAN interface |
| CCOIv2-REQ-328928/B-regionDefinitions | mkahlen: added a reference to the diagnostic parameters |
| CCOIv2-REQ-328973/B-confirmation_off_plusLBI | mkahlen: added reference to diagnostic parameter |
| CCOIv2-REQ-328974/B-confirmation_off_plusLBI_IVSU | mkahlen: added reference to diagnostic parameter |
| CCOIv2-REQ-328977/B-ford_app | mkahlen: added a reference to the diagnostic parameter |
| CCOIv2-REQ-328978/B-lincoln_app | mkahlen: added a reference to the diagnostic parameter |
| CCOIv2-REQ-328979/B-ford_brand | mkahlen: added a reference to the diagnostic parameter |
| CCOIv2-REQ-328980/B-lincoln_brand | mkahlen: added a reference to the diagnostic parameter |
| CCOIv2-REQ-328981/B-ford_modemName | mkahlen: added a reference to the diagnostic parameter |
| CCOIv2-REQ-328982/B-lincoln_modemName | mkahlen: added a reference to the diagnostic parameter |
| CCOIv2-REQ-362920/B-Do not save devices when screen is deactivated | mkahlen: added an additional example for reverse view camera |

# Table of Contents

# 1 Terms and Definitions

| Term | Definition |
|---|---|
| *Active Policy Table* | See REQ-296316 |
| *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: <br> − The HMI System <br> − 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. |

| Term | Definition |
|---|---|
| *Active Policy Table* | See REQ-296316 |
| − *Authorized User* | Registered user who authorized association with a vehicle through the vehicle's HMI system. |
| − *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) |
| VSCS | Vehicle Specific Configuration Specification, containing CCS default Config Parameter values which may depend on region, vehicle type, etc. |

Table 2 – Abbreviations

# 2 Architectural Design

## 2.1 Boundary Diagram

### 2.1.1 CCOIv2-BD-REQ-362932/A-Customer Connectivity Settings
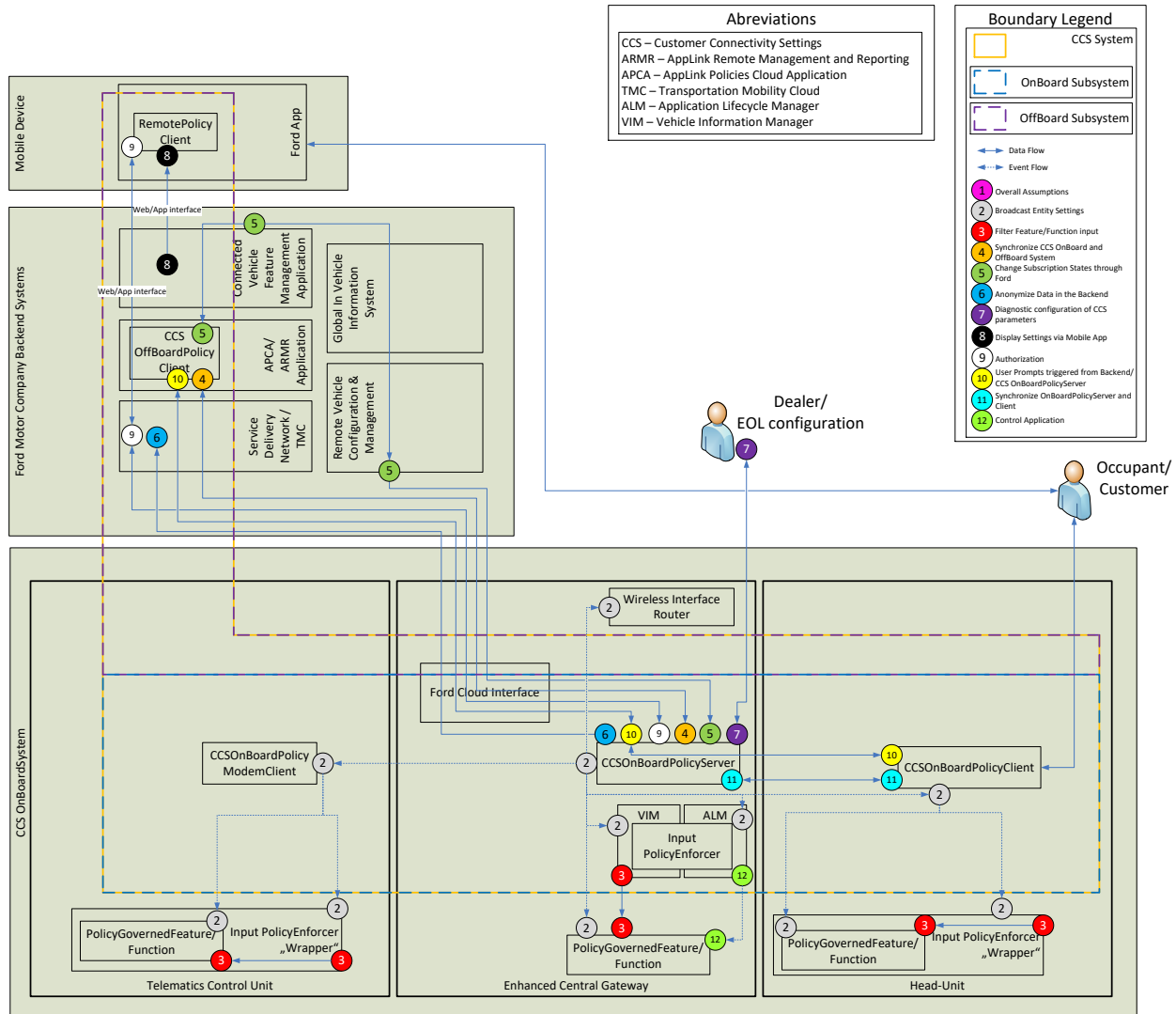


## 2.2 Interface Requirements

### 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/B-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.

### 2.2.1.3.1  CCOIv2-REQ-372144/A-Meta Data: Hash Value Format

The "fingerprintSHA256" hash value in PolicyGovernedCCSFileMetaData is transferred in hexadecimal format.

## 2.2.2  Diagnostics Interface

### *2.2.2.1  Method 2*

#### 2.2.2.1.1  CCOIv2-REQ-371613/A-Diagnostic Parameter for Country Code

The table below lists parameters for the CCSOnBoardPolicyClient that are accessible via diagnostics, the supplier, or by Ford via DET, EOL or OTA. The list of CCOI configurable parameters shall be identified in the CCOI Subsystem Specification Diagnostic Specification (Part 2).

| **CCOI Configurable Parameters or Diagnostics Values** |
|---|
| First Letter of Country Code – ASCII |
| Second Letter of Country Code – ASCII |

Table 3 – Diagnostic Parameters

#### 2.2.2.1.2  CCOIv2-REQ-371614/A-Diagnostic Parameter for Vehicle Brand

The table below lists parameters for the CCSOnBoardPolicyClient that are accessible via diagnostics, the supplier, or by Ford via DET, EOL or OTA. The list of CCOI configurable parameters shall be identified in the CCOI Subsystem Specification Diagnostic Specification (Part 2).

| **CCOI Configurable Parameters or Diagnostics Values** |
|---|
| Brand |

Table 4 – Diagnostic Parameters

#### 2.2.2.1.3  CCOIv2-REQ-371615/A-Diagnostic Parameter for Backup Start Passcode

The table below lists parameters for the CCSOnBoardPolicyClient that are accessible via diagnostics, the supplier, or by Ford via DET, EOL or OTA. The list of CCOI configurable parameters shall be identified in the CCOI Subsystem Specification Diagnostic Specification (Part 2).

| **CCOI Configurable Parameters or Diagnostics Values** |
|---|
| Backup Start Passcode (aka LBI) |

Table 5 – Diagnostic Parameters

#### 2.2.2.1.4  CCOIv2-REQ-371616/A-Diagnostic Parameter to Show/Hide CCS Menu

The table below lists parameters for the CCSOnBoardPolicyClient that are accessible via diagnostics, the supplier, or by Ford via DET, EOL or OTA. The list of CCOI configurable parameters shall be identified in the CCOI Subsystem Specification Diagnostic Specification (Part 2).

**CCOI Configurable Parameters or Diagnostics Values**

Customer Connectivity Setting

Note: this setting does not disable CCS but it hides the menu entry "Connected Vehicle Features". For more information see the HMI specification requirement [H31j.R157] (SYNC-87979)].

Table 6 – Diagnostic Parameters

# 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<br>2. CCSOnBoardPolicyServer sends User Prompt Command Response to CCSOffBoardPolicyClient<br>3. Driver turns ignition ON<br>4. CCSOnBoardPolicyServer triggers the user prompt on the CCSOnBoardPolicyClient<br>5. CCSOnBoardPolicyClient shows user prompt on vehicle<br>6. Driver confirms the user prompt<br>7. CCSOnBoardPolicyClient informs the CCSOnBoardPolicyServer about the driver's choice<br>8. CCSOnBoardPolicyServer informs the CCSOffBoardPolicyClient about the driver's choice with a correlated user prompt alert |
| **Post-conditions** | - |
| **List of Exception Use Cases** | E1:<br>1b) CCSOffBoardPolicyClient sends User Authorization Command to CCSOnBoardPolicyServer<br>   .1 instead of step 2 CCSOnBoardPolicyServer sends User Authorization Command Response to CCSOffBoardPolicyClient<br>   .2 proceed with step 3.<br><br>E2:<br>1c) A trigger condition at the CCSOnBoardPolicyServer is met (REQ-362658) for an onboard-triggered user prompt<br>    .1 proceed with step 3<br>    .2 skip step 8. of the Scenario Description<br><br>E3:<br>3a) Ignition is already ON<br>    .1 skip step 3. and proceed with step 4.<br><br>E4:<br>5a) The head unit shows higher prioritized pop-ups<br>    .1 CCSOnBoardPolicyClient shows the user prompt after the higher prioritized pop-ups<br>    .2 proceed with step 6<br><br>E5:<br>6a) Driver chooses "Ask me Later" or turns ignition off without making a choice<br>    .1 proceed with step 7. of the Scenario Description<br>    .2 After step 7. go back to step 3. to retry<br><br>E6:<br>6b) Driver declines the user prompt<br>    .1 proceed with step 7. of the Scenario Description<br><br>E7:<br>6c) The prompt type is "information" or "error"<br>    .1 The driver closes the pop-up<br>    .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/B-Effects of Driver Selecting Yes

If the user selects "yes" on the user prompt, the CCSOnBoardPolicyClient 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).
- transition to Synchronization State "OnBoardUpdatePending".

#### 3.1.2.3.2    CCOIv2-REQ-362708/B-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

- o send the user's choice via SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer with promptResult = "SPCM_CCSM_PROMPT_RESULT_SELECT_NO".
  - o transition to Synchronization State "OnBoardUpdatePending".
- 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 sends the user's choice via SpcmCcsmUserPromptResp to the CCSOnBoardPolicyServer with promptResult = "SPCM_CCSM_PROMPT_RESULT_SELECT_NO" and transitions to Synchronization State "OnBoardUpdatePending".

### 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/B-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".

Note: as long as the CCSOnBoardPolicyClient is not informed about a ClearUserSettingsCommand it is a known limitation that a prompt may still be displayed to a driver after the ClearUserSettingsCommand has already been failed by the CCSOnBoardPolicyServer.

### *3.1.2.5   CCOIv2-REQ-296283/C-Effect of PTE or UFM Update*

If the CCSOnBoardPolicyClient receives a new UFM file, the CCSOnBoardPolicyClient shall re-check for "REQ-362705-Fail User Prompt when screenID or promptType Unknown". If the user prompt passes the check with the new UFM file, then update the text in the user prompt. If the user prompt fails the check with the new UFM file, then proceed as outlined in REQ-362705.

### *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*
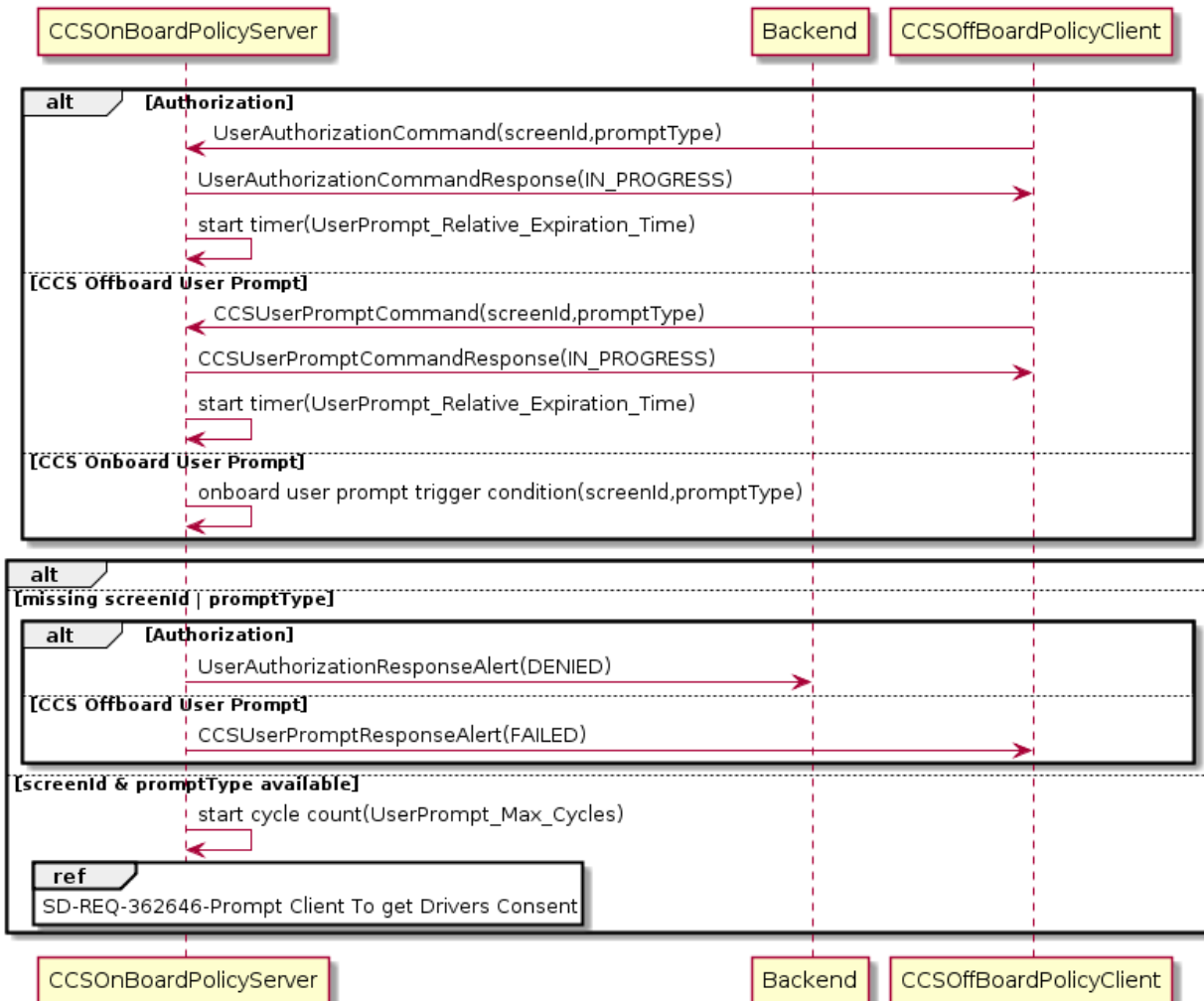
## 3.1.3.2 CCOIv2-SD-REQ-362646/A-Prompt Client To get Drivers Consent
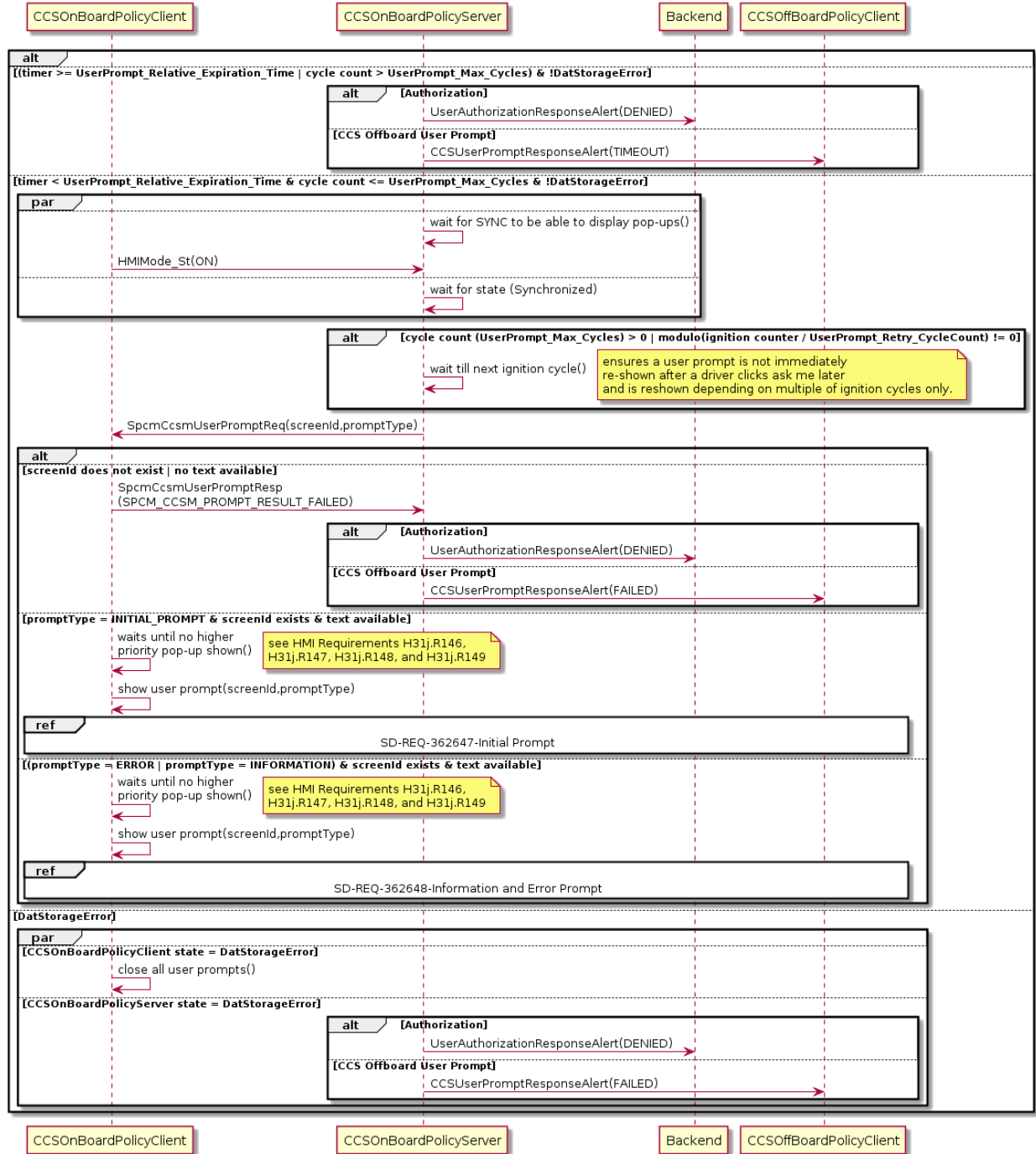
### 3.1.3.3 CCOIv2-SD-REQ-362647/B-Initial Prompt
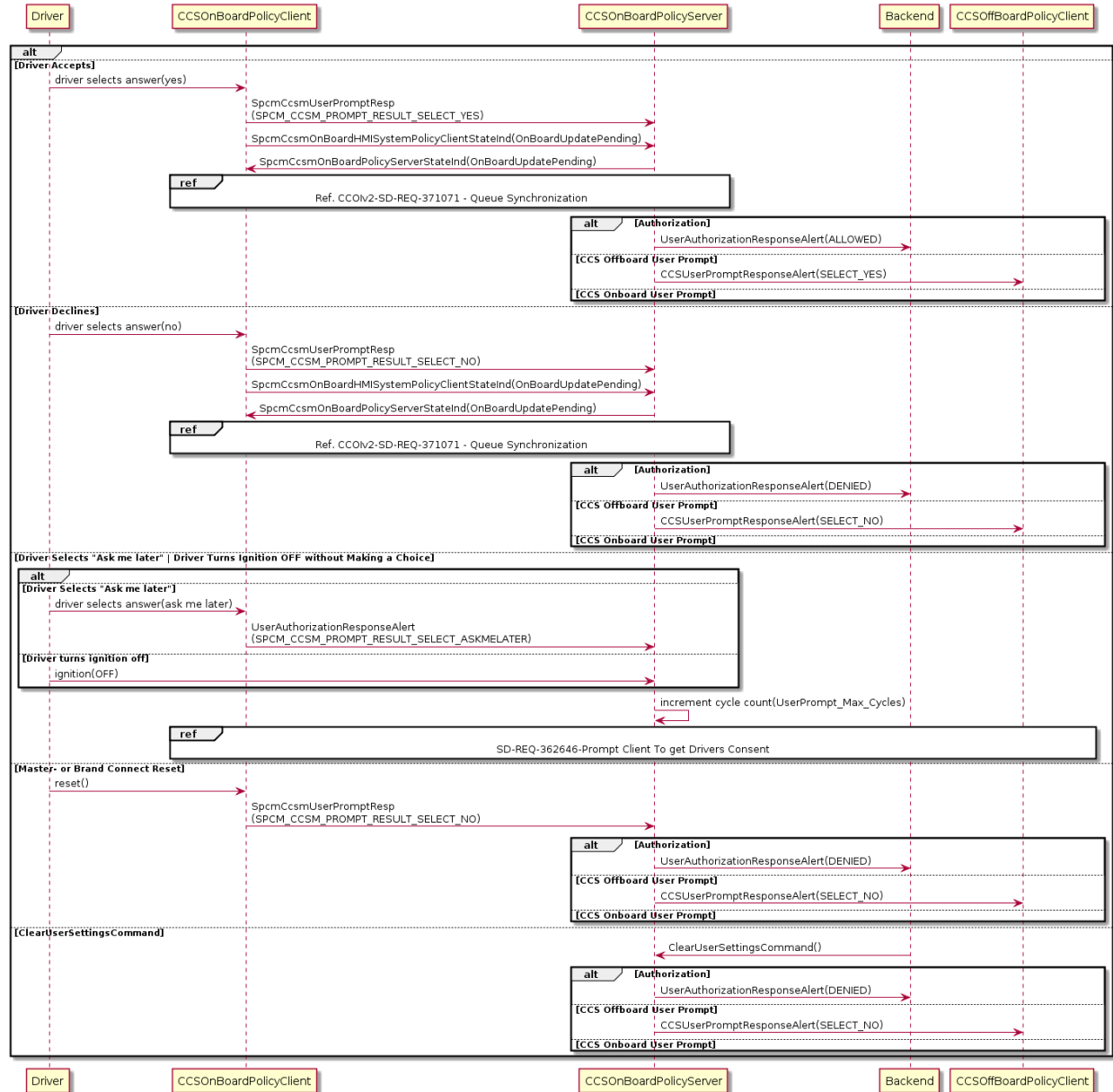
### 3.1.3.4 *CCOIv2-SD-REQ-362648/B-Information and Error Prompt*
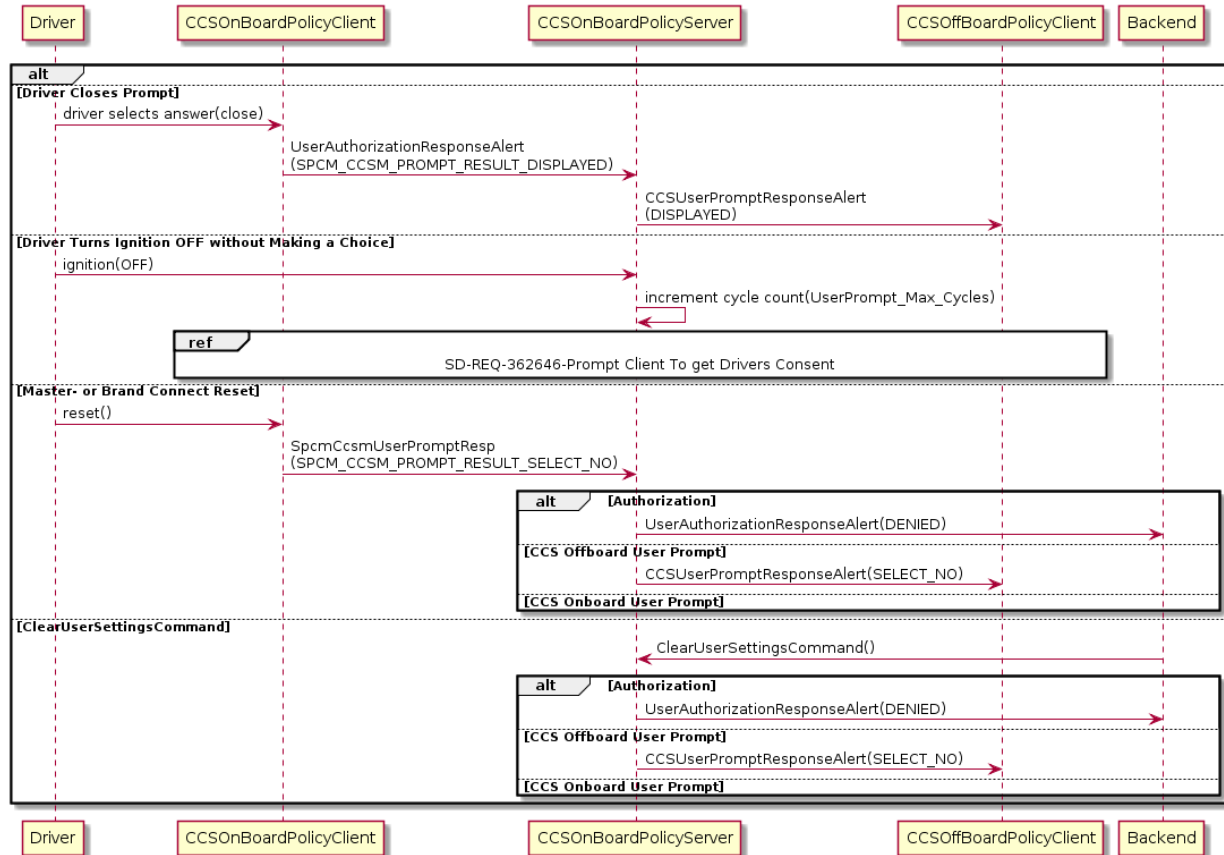
## 3.2 CCOIv2-FUN-REQ-317862/C-Error and local update prompt handling

### 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*

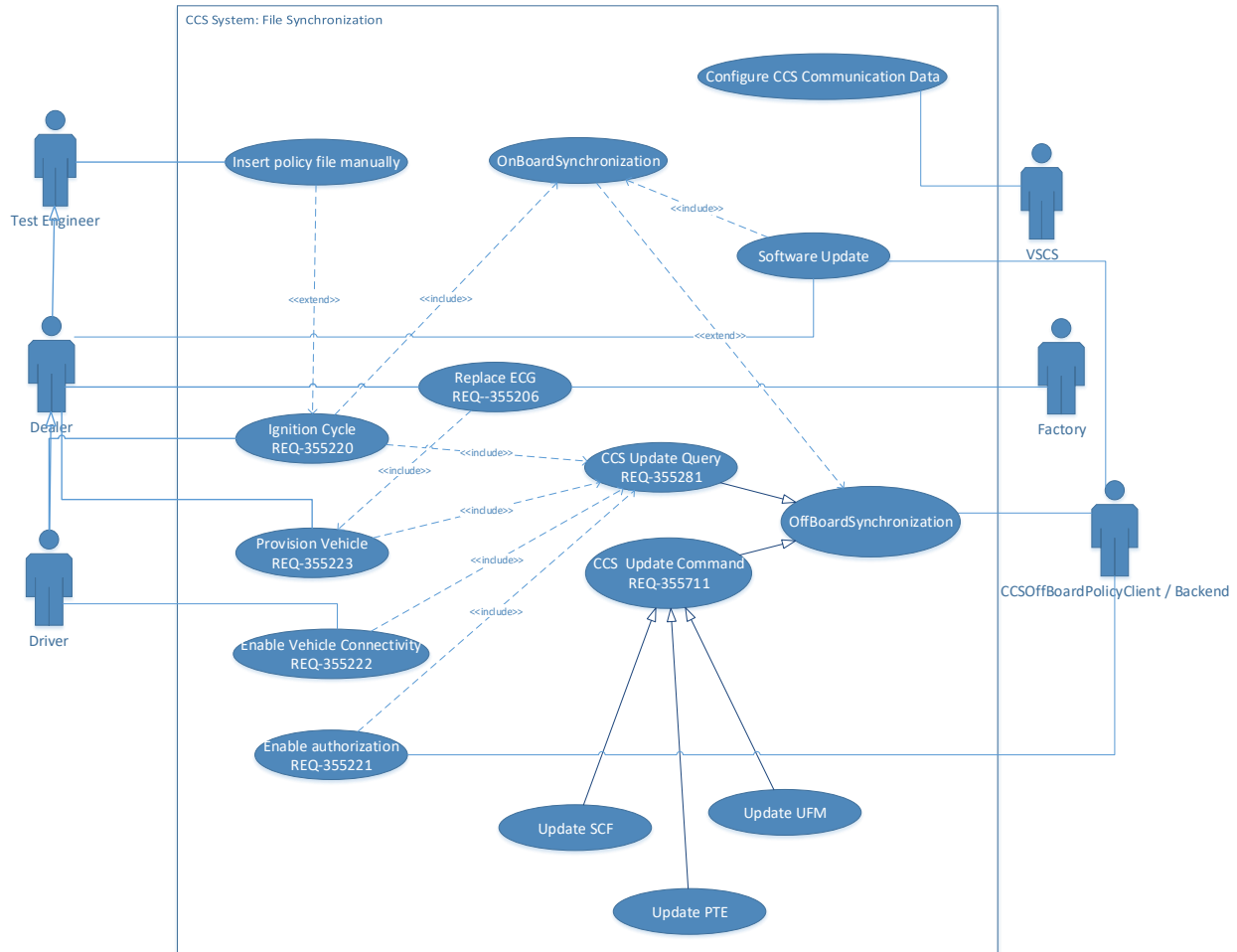##### 3.2.1.3.1 CCOIv2-REQ-362637/A-Deadline to Inform Server about Setting Changes

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-UCD-REQ-371112/A-Update Policy Files*



#### 3.3.1.2 *CCOIv2-UC-REQ-357523/B-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, CFM or SCF file or Entity Settings 4. CCS System transitions through OnboardDistributedStateMachine to state "Synchronizing" 5. CCS Server transmits new policy files and/or Entity Settings to CCS Client successfully 6. CCS Server and Client enter Synchronization state "Synchronized" |
| Post-conditions | Latest policy files and Entity Settings 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-362912/B-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<br>2. CCS OnBoardPolicyServer and CCS OnBoardPolicyClient start up<br>3. CCS OnBoardPolicyServer holds an update of PTE, CFM or SCF file or Entity Settings.<br>4. CCS System transitions through OnboardDistributedStateMachine to state "Synchronizing"<br>5. CCS Server transmits new policy files and/or Entity Settings to CCS Client successfully<br>6. CCS Server and Client enter Synchronization state "Synchronized" |
| Post-conditions | Latest policy files and Entity Settings synchronized between CCS Server and CCS Client |
| List of Exception Use Cases | E1:<br>3a) CCS Server has no update of policy files compared to the meta data received via SynchronizationSession_Rq<br>    .1 CCS System transitions through OnboardDistributedStateMachine to "Synchronized" without policy file transfer |
| Interfaces | |

### 3.3.1.4   CCOIv2-UC-REQ-362282/B-Policy File or Entity Settings 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, CFM or SCF file or Entity Settings via OffBoardSynchronization<br>2. CCS OnBoardPolicyServer completes Consistency Check successfully<br>3. CCS System transitions to "synchronizing"<br>4. CCS Server transmits new policy files and/or Entity Settings to CCS Client successfully<br>5. CCS Server and Client enter Synchronization state "Synchronized" |
| Post-conditions | Policy files and Entity Settings synchronized between CCS Server and CCS Client |
| List of Exception Use Cases | E1:<br>2a) Consistency Check was not successful<br>    .1 CCS Server does not initiate an OnBoardSynchronization<br><br>E2:<br>4a) Transmission failed<br>    .1 CCS Server applies OnBoardSynchronization retry strategy |
| Interfaces | |

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

| Actors | Test Engineer, CCS OnBoardPolicyServer |
|---|---|

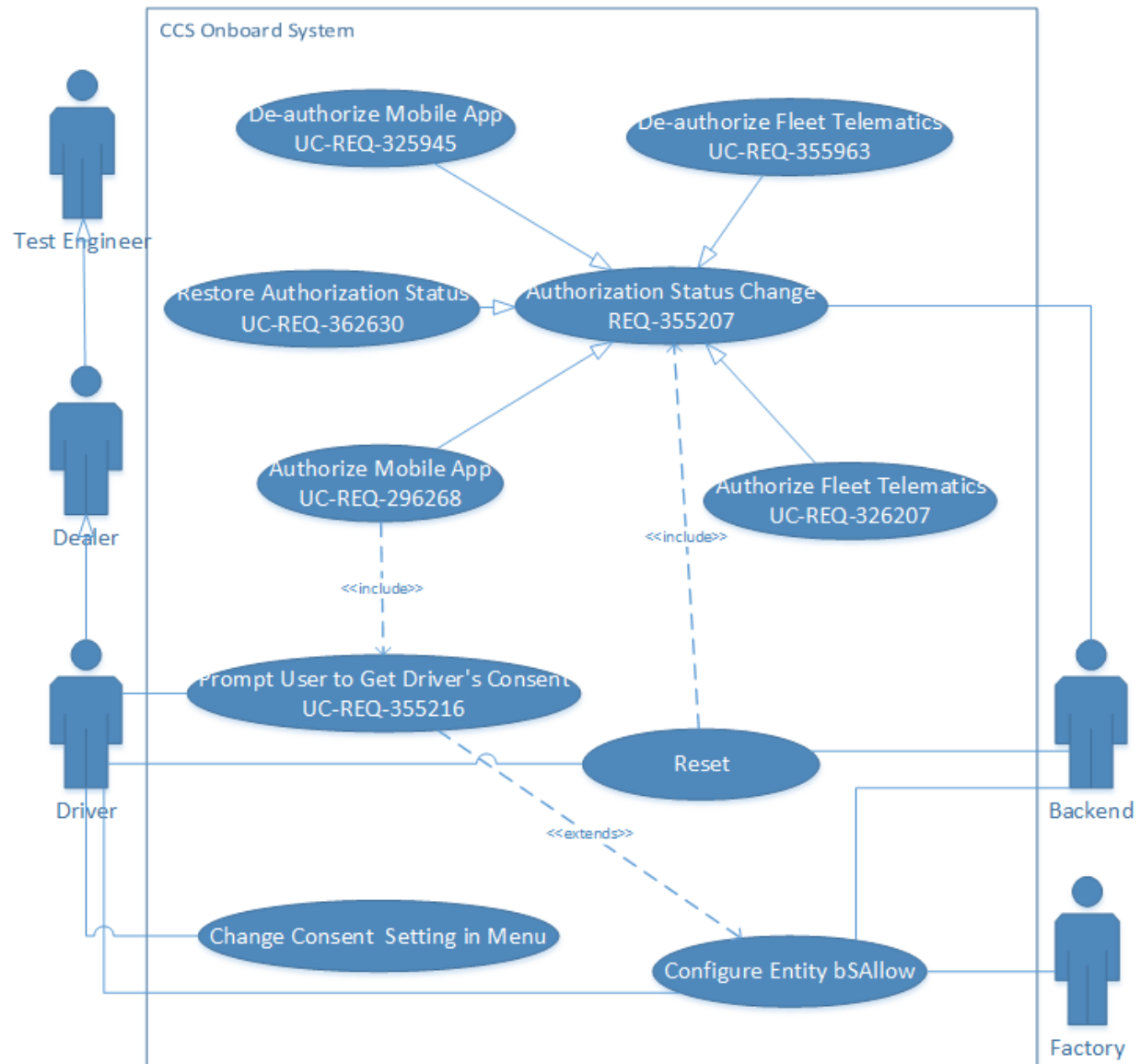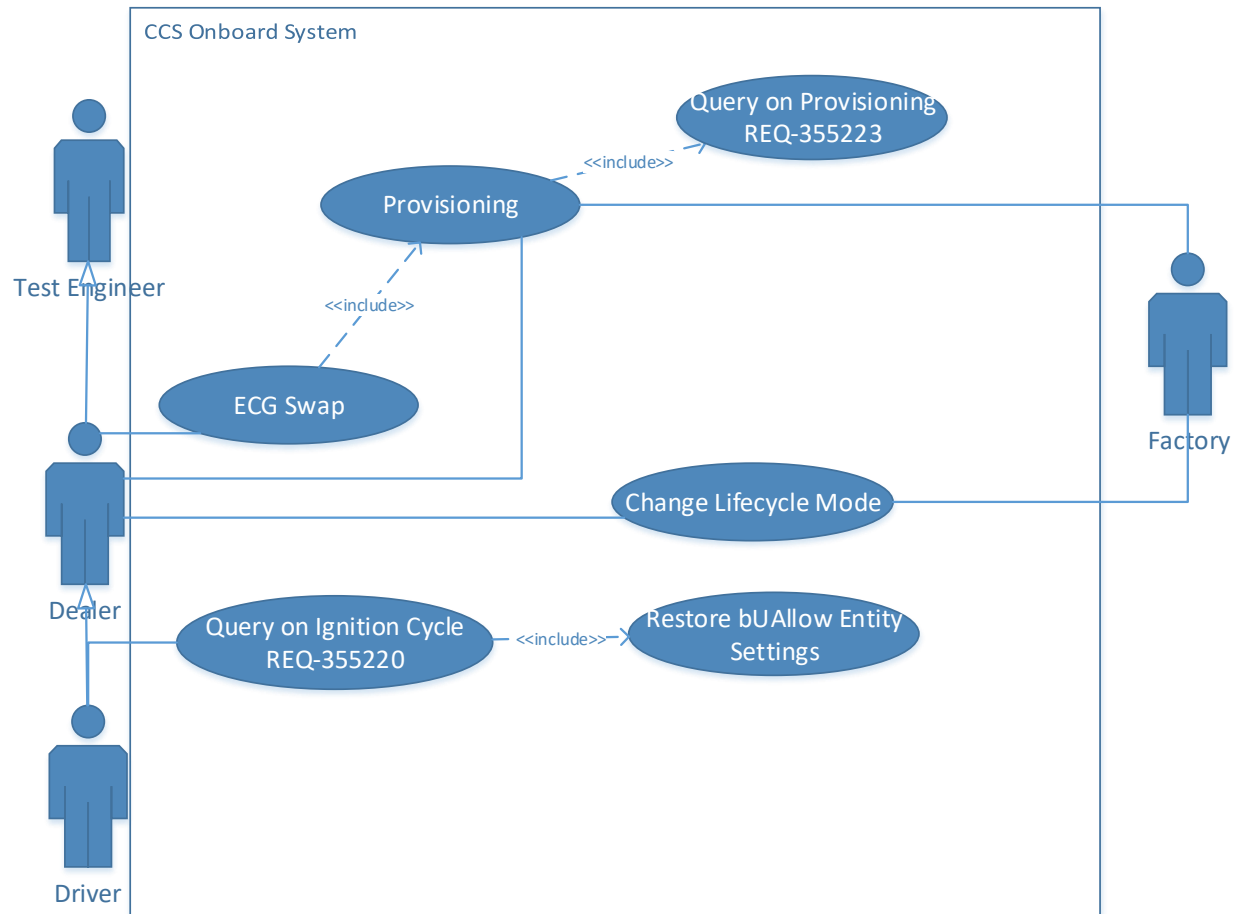| Pre-conditions | CCS OnBoardPolicyServer and CCS OnBoardPolicyClient are running, CCS System synchronized with Custom Policy File for testing |
|---|---|
| Scenario Description | 1. Test Engineer reverts to default Policy File on CCS OnBoardPolicyServer with development tool<br>2. CCS OnBoardPolicyServer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

### 3.3.1.6 CCOIv2-UC-REQ-357525/B-Software Update

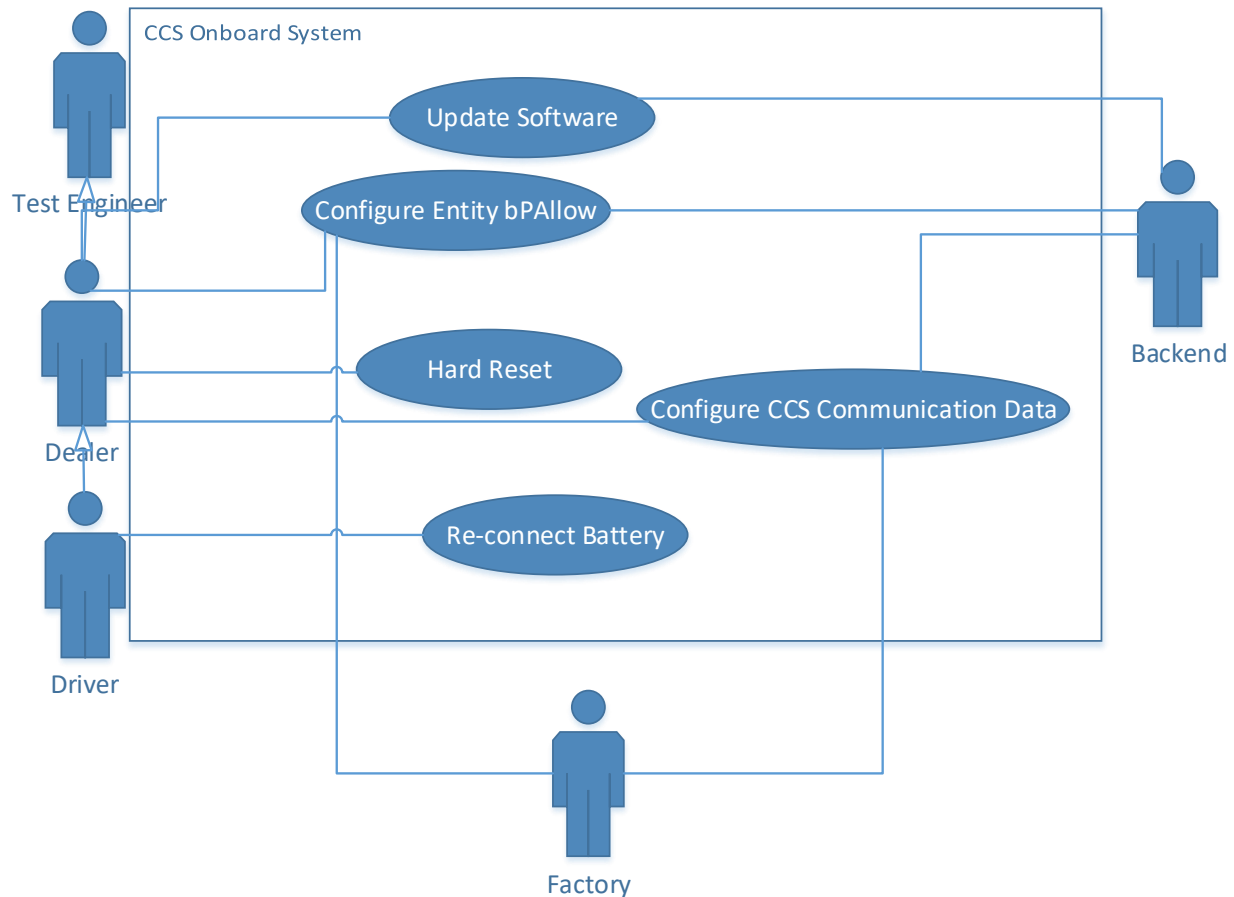| Actors | Dealer, Backend, CCS OnBoardPolicyServer |
|---|---|
| Pre-conditions | CCS OnBoardPolicyServer and CCS OnBoardPolicyClient are running, CCS System synchronized |
| Scenario Description | 1. Dealer or Backend initiates module software update<br>2. CCS System enters Synchronization state "Invalid"<br>3. Software update completes<br>4. CCS System transitions through OnboardDistributedStateMachine to state "Synchronizing"<br>5. CCS Server transmits new policy files and Entity Settings to CCS Client successfully<br>6. CCS Server and Client enter Synchronization state "Synchronized" |
| Post-conditions | Latest policy files and Entity Settings 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<br>   .1 CCS System transitions through OnboardDistributedStateMachine to "Synchronized" without policy file transfer |
| Interfaces | |

### 3.3.1.7 CCOIv2-UC-REQ-362320/B-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. During an OnBoardSynchronization (a), the CCS OnBoardPolicyServer receives another trigger for OnBoardSynchronization (b)<br>2. The ongoing OnBoardSynchronization (a) completes<br>3. The received OnBoardSynchronization (b) starts |
| Post-conditions | All updates have been synchronized |
| List of Exception Use Cases | |
| Interfaces | |

### 3.3.1.8 CCOIv2-UCD-REQ-361932/B-Update Entity Settings

CCS Onboard System

CCS Onboard System

- Test Engineer
- Factory
- Dealer
- Driver

Provisioning

Query on Provisioning
REQ-355223

ECG Swap

Change Lifecycle Mode

Query on Ignition Cycle
REQ-355220

Restore bUAllow Entity
Settings

<<include>>

### 3.3.1.9 CCOIv2-UC-REQ-355218/B-Change Consent Setting in Menu

| | |
|---|---|
| **Actors** | Driver, Dealer, Test Engineer, CCSOffBoardPolicyClient, CCSOnBoardPolicyServer |
| **Pre-conditions** | CCSServerEntitySettingsStatus is in status EntitiesReady |
| **Scenario Description** | 1. Driver, Dealer, or Test Engineer navigates to the CCS menu<br>2. Driver, Dealer, or Test Engineer clicks on a toggle switch to change the consent for a CCS entity<br>3. Driver, Dealer, or Test Engineer accepts the confirmation prompt<br>4. CCSOnboardPolicyClient requests a settings update for this entity with the CCSOnboardPolicyServer<br>5. CCSOnBoardPolicyServer peforms an onbord synchronization |
| **Post-conditions** | - |
| **List of Exception Use Cases** | E1:<br>1a) Menu is not accessible to do Local Update Pop-Up or Feature Unavailable pop-up<br><br>E2:<br>2a) Changing consent not possible when switch is not changeable (REQ-296876)<br>   .1 skip the rest of the steps<br><br>E3:<br>3a) Driver, Dealer, or Test Engineer declines the confirmation prompt or turns ignition OFF without accepting the prompt<br>   .1 skip the rest of the steps |

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


### 3.3.1.10  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** | |


### 3.3.1.11  CCOIv2-UC-REQ-355202/B-Configure Entity bSAllow

| **Actors** | Test Engineer, VSCS, Backend, Driver, CCSOnBoardPolicyServer |
|---|---|
| **Pre-conditions** | - |
| **Scenario Description** | 1.  Backend, VSCS, or Test Engineer change the subscription (bSAllow) bit for one or many entities in the vehicle configuration<br>2.  CCSOnboardPolicyServer changes the entity subscription bit according to step 1 on the CCSOnboardPolicyServer<br>3.  CCSOnBoardPolicyServer performs an onboard synchronization |
| **Post-conditions** | - |
| **List of Exception Use Cases** | E2:<br>2a) If the apply mode is delayed, change the subscription bit on next ignition on per Ford Telematics Communication Protocol Specification. |
| **Interfaces** | |


### 3.3.1.12  CCOIv2-UC-REQ-355203/B-Configure Entity bPAllow

| **Actors** | Test Engineer, Dealer, VSCS, CCSOffBoardPolicyClient, Driver, CCSOnBoardPolicyServer |
|---|---|
| **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<br>2.  CCSOnboardPolicyServer changes the entity capability bit according to step 1 on the CCSOnboardPolicyServer<br>3.  CCSOnBoardPolicyServer performs an onboard synchronization |
| **Post-conditions** | - |
| **List of Exception Use Cases** | E1:<br>2a) If the apply mode is delayed, change the capability bit on next ignition on per Ford Telematics Communication Protocol Specification. |

| Interfaces | |
|---|---|

### 3.3.1.13  CCOIv2-UC-REQ-355208/B-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<br>2. CCSOnboardPolicyServer resets the entities to their default values<br>3. CCSOnBoardPolicyServer performs an onboard synchronziation |
| Post-conditions | - |
| List of Exception Use Cases | E1:<br>1b) Backend sends a Clear User Settings Command<br>    .1 proceed with step 2 of the Scenario Description<br><br>E2:<br>4a) The vehicle was authorized before the master reset (bAllow for entity "Authorized" ID 3, Type 0 is enabled)<br>    .1 Continue with REQ-355207 Authorization Status Change (CCS OnBoardPolicyServer) |
| Interfaces | |

### 3.3.1.14  CCOIv2-UC-REQ-355201/B-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<br>2. CCSOnboardPolicyServer sets the default CCS entity settings<br>3. CCSOnBoardPolicyServer performs an onboard synchronization<br>4. Continue with use case REQ-355223 Query on Provisioning (CCS OnBoardPolicyServer) |
| Post-conditions | - |
| List of Exception Use Cases | - |
| Interfaces | |

### 3.3.1.15  CCOIv2-UC-REQ-355204/B-Change Lifecycle Mode

| Actors | Dealer, Test Engineer, Factory, CCSOnBoardPolicyServer |
|---|---|
| Pre-conditions | - |
| Scenario Description | 1. Dealer, Test Engineer, or Factory changes the vehicle's life cycle mode<br>2. CCSOnboardPolicyServer sets the default CCS entity settings<br>3. CCSOnBoardPolicyServer performs an onboard synchronization |
| Post-conditions | The vehicle uses the CCS default entity settings |
| List of Exception Use Cases | - |
| Interfaces | |

### 3.3.1.16  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)<br>2. Dealer or Test Engineer replace the ECG module with a another ECG module<br>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)<br>4. Continue with use case REQ-355201 Provisioning |
| Post-conditions | - |
| List of Exception Use Cases | E1:<br>1a) Inhale not possible<br>   .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<br>   .2 continue with step 2. of the Scenario Description<br>   .3 the Dealer or Test Engineer uses the reconstructed method 2 parameters from above for step 3. of the Scenario Description<br>   .4 continue with step 4. of the Scenario Description |
| Interfaces | |

### 3.3.1.17  CCOIv2-UC-REQ-355212/B-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<br>2. CCSOnBoardPolicyServer performs an onboard synchronization |
| Post-conditions | CCSOnBoardPolicyServer has restored the settings form the CCSOffBoardPolicyClient. |
| List of Exception Use Cases | |
| Interfaces | |

### 3.3.1.18  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 | |

### 3.3.1.19  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 | |

### 3.3.1.20 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<br>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 | |

## 3.3.2 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 |
| Waiting | OnBoardPolicyClient initialized, Consistency Check performed (REQ-362371) AND OnBoardPolicyServer_St == SynchronizationNeeded | SynchronizationNeeded |
| Waiting | OnBoardPolicyServer_St == DataStorageError | DataStorageError |
| SynchronizationNeeded | OnBoardPolicyServer_St == Synchronizing | Synchronizing |
| Synchronizing | OnBoardPolicyServer_St == Synchronized | Synchronized |
| Synchronizing | Hash comparison failed (REQ-358309) OR OnBoardPolicyServer_St == SynchronizationFailed | SynchronizationFailed |

| OnBoardHPolicyClient_St In State | Trigger and Guard | OnBoardPolicyClient_St Transitions to and Transmits New State |
|---|---|---|
| SynchronizationFailed | OnBoardPolicyServer_St == SynchronizationNeeded | SynchronizationNeeded |
| Any of {Waiting, DataStorageError, OnBoardUpdatePending, OffBoardUpdatePending, SynchronizationNeeded, Synchronizing, SynchronizationFailed, Synchronized} | OnBoardPolicyServer_St == OnBoardDistributed StateMachine Inconsistent | OnBoardDistributed StateMachine Inconsistent |
| OnBoardDistributed StateMachine Inconsistent | OnBoardPolicyServer_St == Waiting | Waiting |
| Any of {Waiting, DataStorageError, OnBoardUpdatePending, OffBoardUpdatePending, SynchronizationNeeded, Synchronizing, SynchronizationFailed, Synchronized, OnBoardDistributed StateMachine Inconsistent} | OnBoardPolicyServer_St == Unrecoverable SynchronizationError | UnrecoverableSynchronizationError |
| Synchronized | Driver changes an Entity Setting in menu OR Driver selects "YES" or "NO" in initialPrompt | OnBoardUpdatePending |
| OnBoardUpdatePending | Driver declines Consent Prompt in menu | Synchronized |
| OnBoardUpdatePending | OnBoardPolicyServer_St == SynchronizationNeeded | SynchronizationNeeded |
| Synchronized | OnBoardPolicyServer_St == OffBoardUpdatePending | OffBoardUpdatePending |
| OffBoardUpdatePending | OnBoardPolicyServer_St == SynchronizationNeeded | SynchronizationNeeded |
| Any of {DataStorageError, OnBoardUpdatePending, OffBoardUpdatePending, SynchronizationNeeded, Synchronizing, SynchronizationFailed, Synchronized, OnBoardDistributed StateMachine Inconsistent} | OnBoardPolicyServer_St == Invalid OR OnBoardPolicyServer_St signal missing | Waiting |
| DataStorageError | OnBoardPolicyServer_St == OffBoardUpdatePending | OffBoardUpdatePending |

| OnBoardHPolicyClient_St In State | Trigger and Guard | OnBoardPolicyClient_St Transitions to and Transmits New State |
|---|---|---|
| Any state | OnBoardPolicyClient shutting down OR OnBoardPolicyClient is conducting firmware update | Invalid |

Table 7 – 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/B-Client Hash Check in State Synchronizing

Once CCS OnBoardPolicyClient receives SpcmCcsmSynchronizationSessionResp in state "Synchronizing" and new policy files are contained, 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/B-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 SpcmCcsmSynchronizationSummaryReportInd, with Meta Data of the files as stored in the persistent storage, to CCS OnBoardPolicyServer.

### 3.3.2.1.3.3 CCOIv2-REQ-371111/A-No Hash Comparison Needed

If no new policy files are contained in SpcmCcsmSynchronizationSessionResp, no hash calculation is required and CCS OnBoardPolicyClient shall send a SpcmCcsmSynchronizationSummaryReportInd, with Meta Data of the files as previously stored in the persistent storage, to CCS OnBoardPolicyServer.

### *3.3.2.2 CCOIv2-REQ-359109/B-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 SpcmCcsmSynchronizationSessionReq.

### *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".

### *3.3.2.4 CCOIv2-REQ-362811/B-Driver Changes a Setting in Menu*

If a driver attempts to change a setting in the CCS menu, the CCSOnBoardPolicyClient shall transition to the state OnBoardUpdatePending.

### 3.3.2.4.1 CCOIv2-REQ-296879/E-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 SpcmCcsmSettingsUpdateInd 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 and transition to state "synchronized".

#### 3.3.2.4.2 CCOIv2-REQ-296880/E-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 SpcmCcsmSettingsUpdateInd 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 and transition to state "synchronized".

#### 3.3.2.4.3 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).

#### *3.3.2.5 CCOIv2-REQ-296879/E-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 SpcmCcsmSettingsUpdateInd 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 and transition to state "synchronized".

#### *3.3.2.6 CCOIv2-REQ-296880/E-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 SpcmCcsmSettingsUpdateInd 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 and transition to state "synchronized".

#### *3.3.2.7 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).

#### *3.3.2.8 CCOIv2-REQ-362639/B-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.

#### 3.3.2.8.1 CCOIv2-REQ-372235/A-Retry Reading Settings

If the CCSOnBoardPolicyClient does not receive a SpcmCcsmEntitySettingsReadResp with the entity settings after X seconds, where X is a configurable parameter, the CCSOnBoardPolicyClient shall re-send a SpcmCcsmEntitySettingsReadReq message to the CCSOnboardPolicyServer every *X* seconds until the CCSOnBoardPolicyClient receives the entity settings.

#### *3.3.2.9 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.

#### *3.3.2.10 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.

### 3.3.2.11 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.

### 3.3.2.12 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.

### 3.3.3 Activity Diagrams

#### *3.3.3.1 CCOIv2-ACT-REQ-362528/B-OnBoardSynchronization*
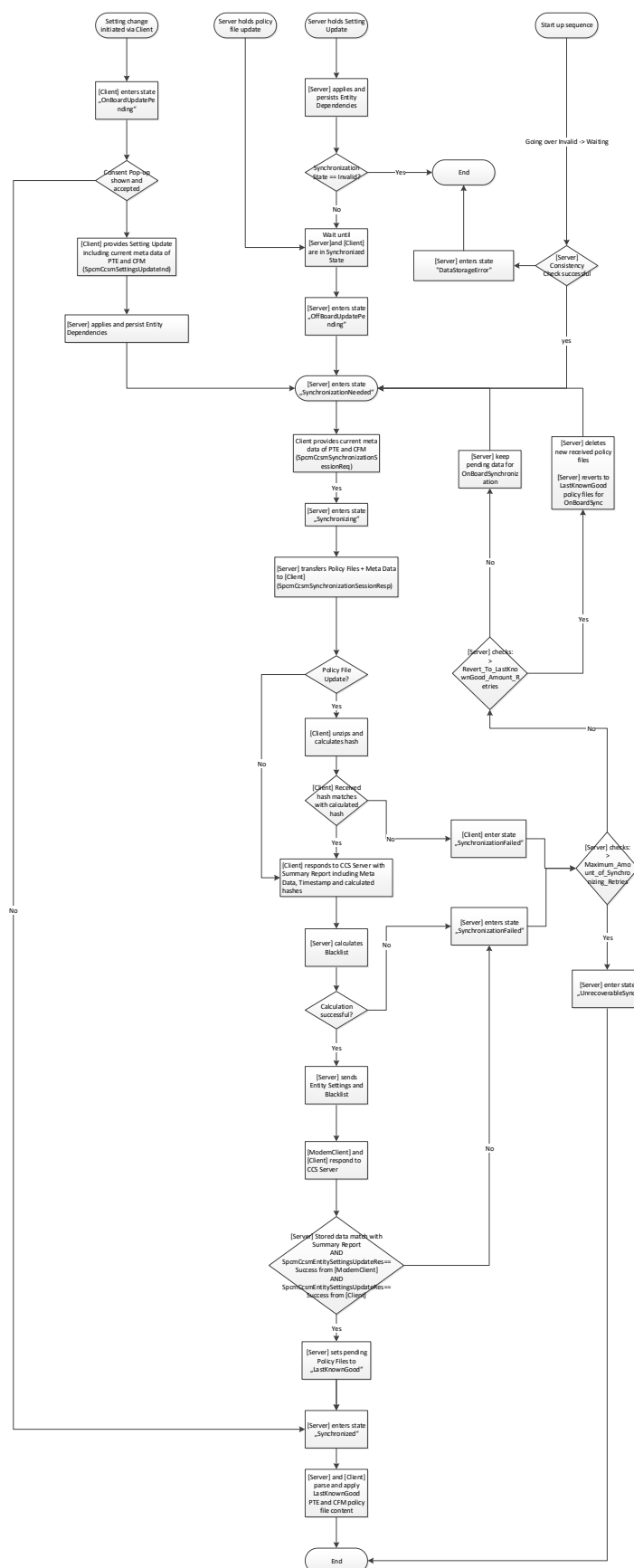
## 3.3.4 State Machine Diagrams

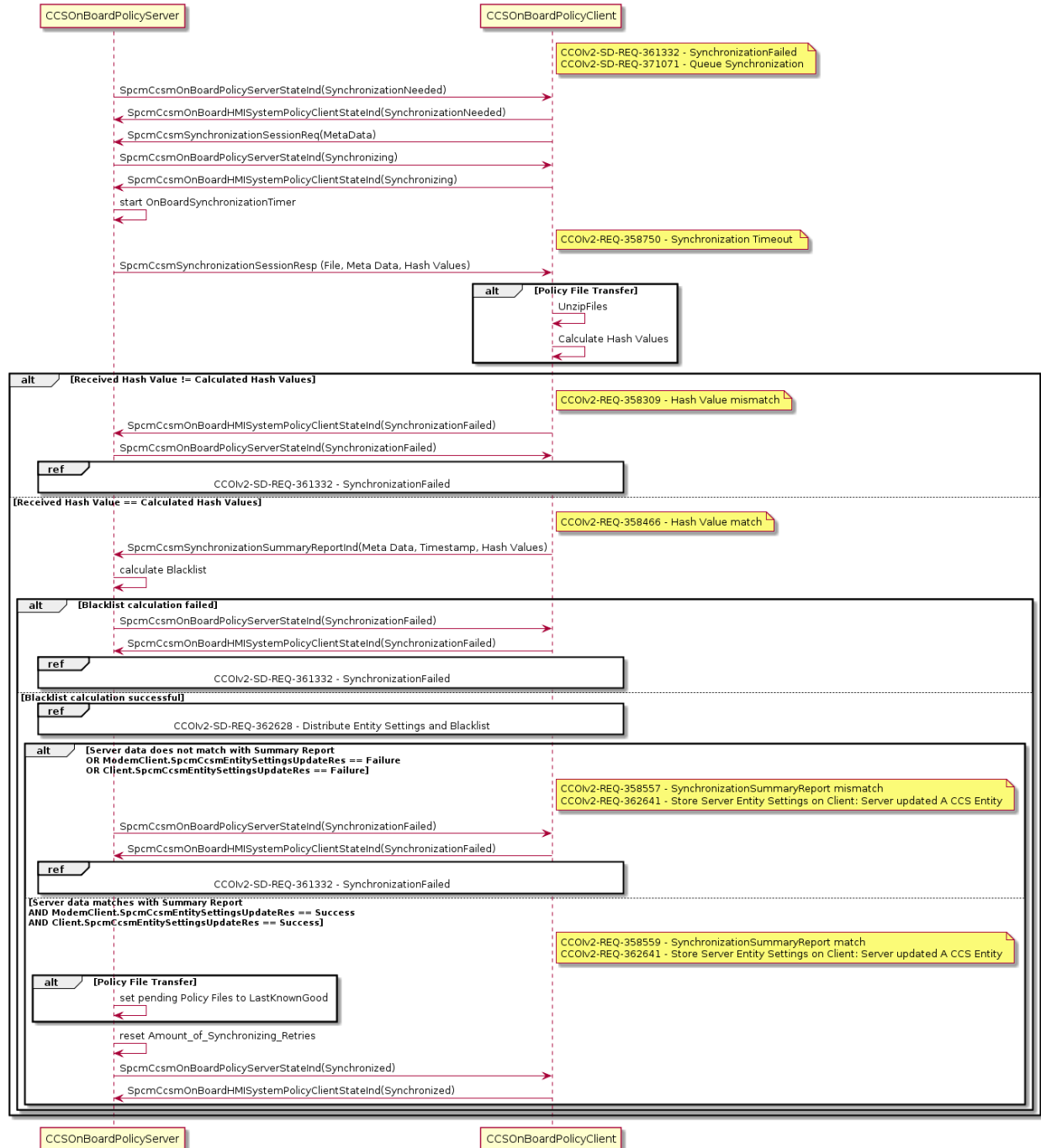### 3.3.4.1 *CCOIv2-STM-REQ-358305/B-OnBoardSynchronization*
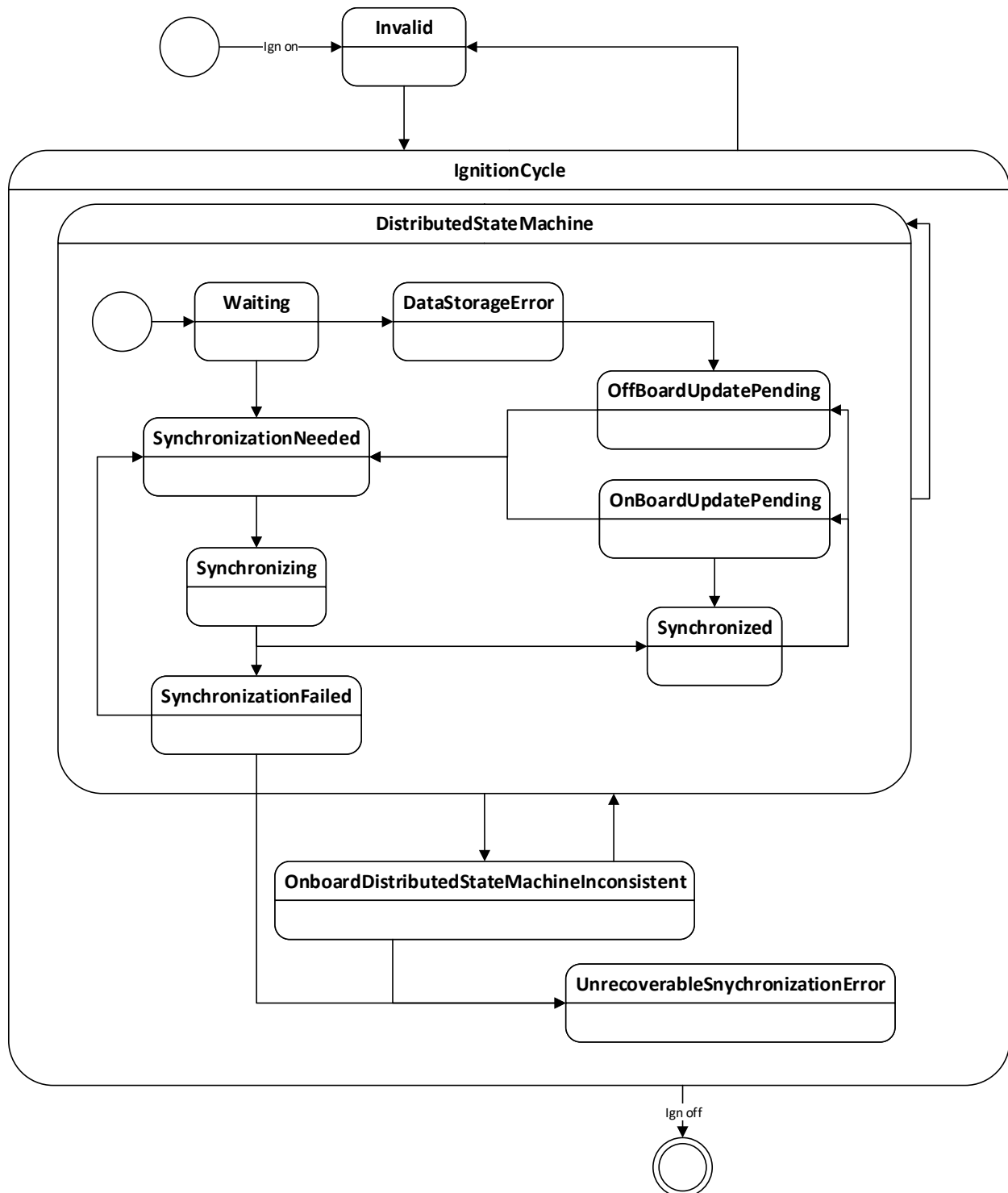
## 3.3.5 Sequence Diagrams

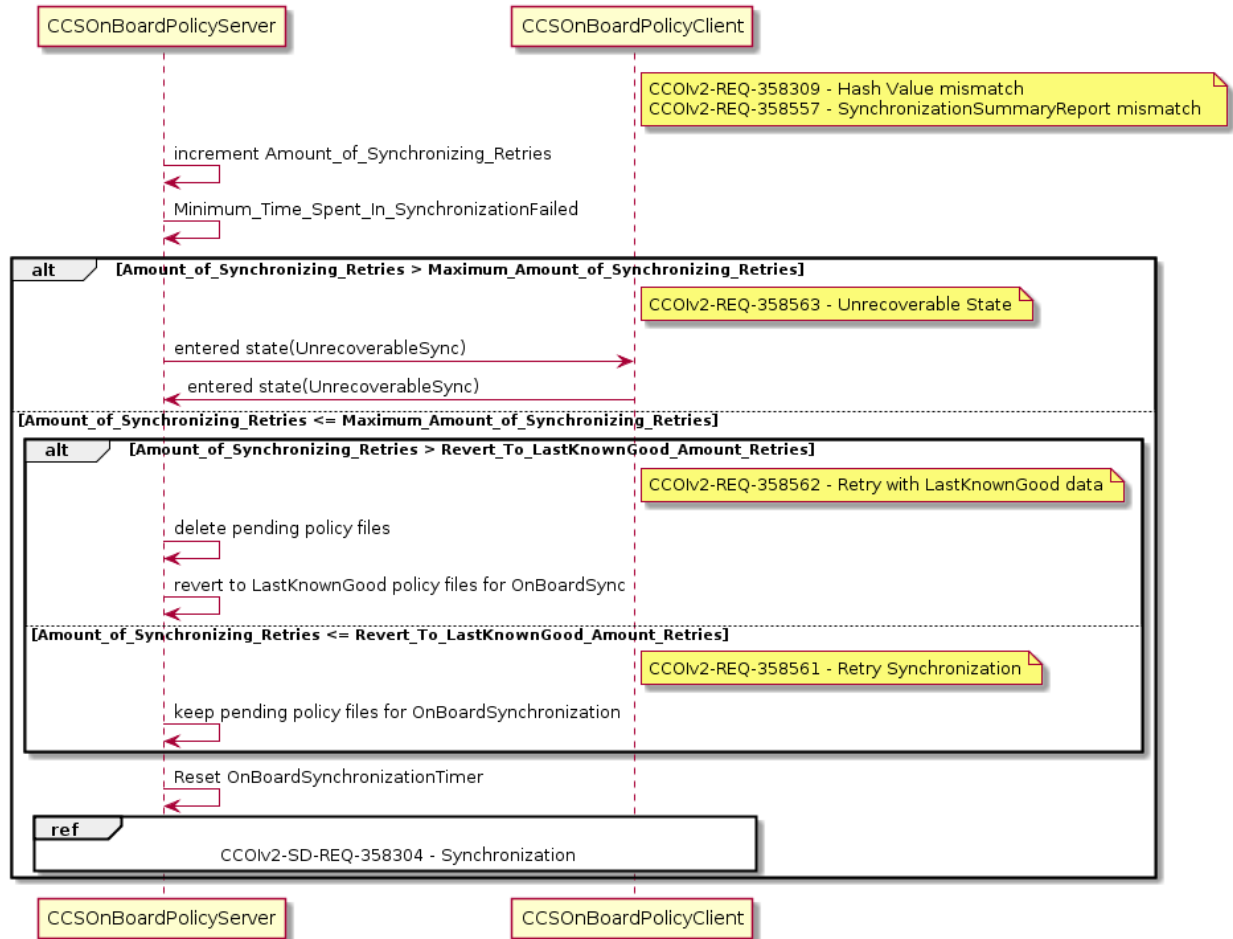### 3.3.5.1 CCOIv2-SD-REQ-358303/B-Power On Sequence
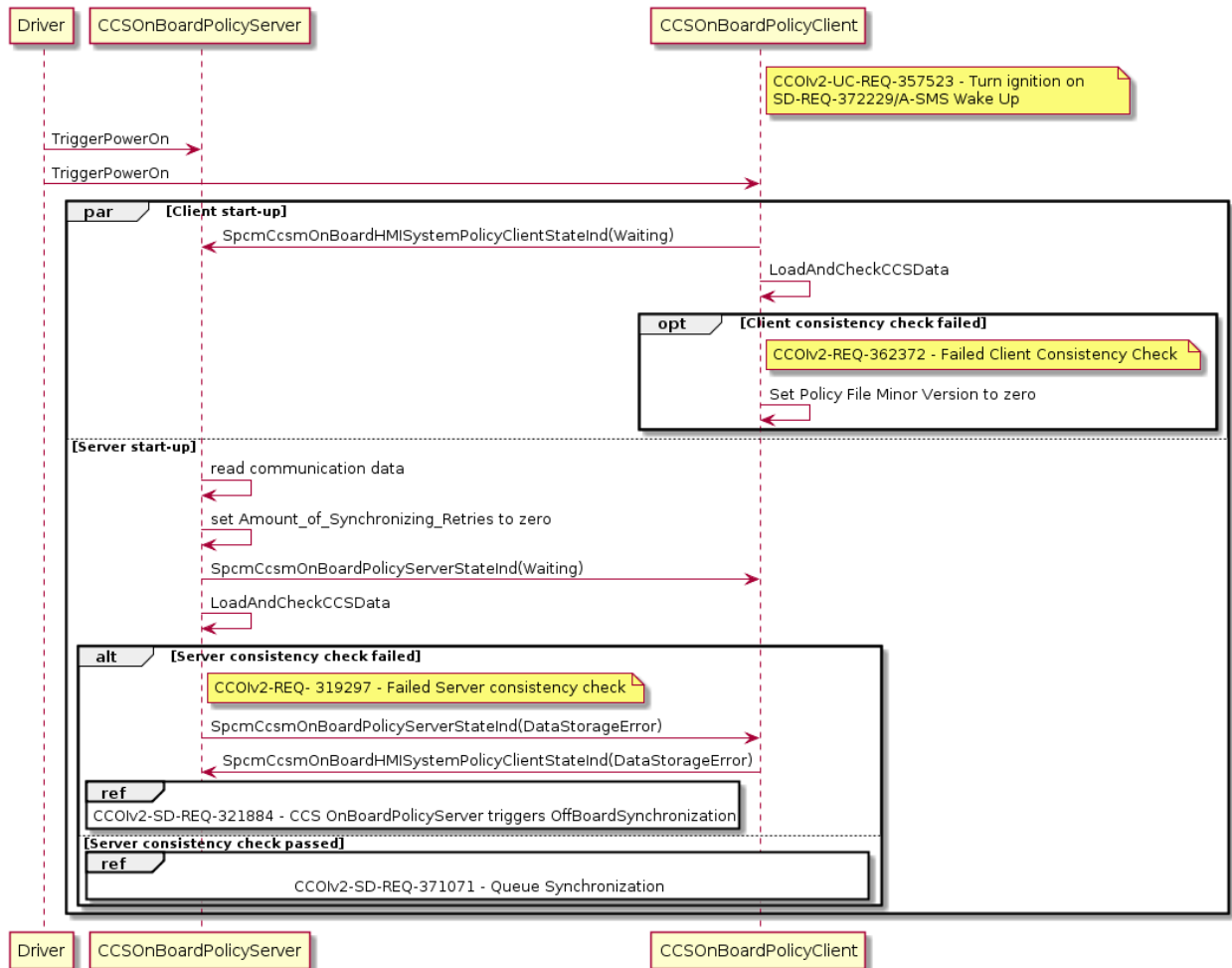
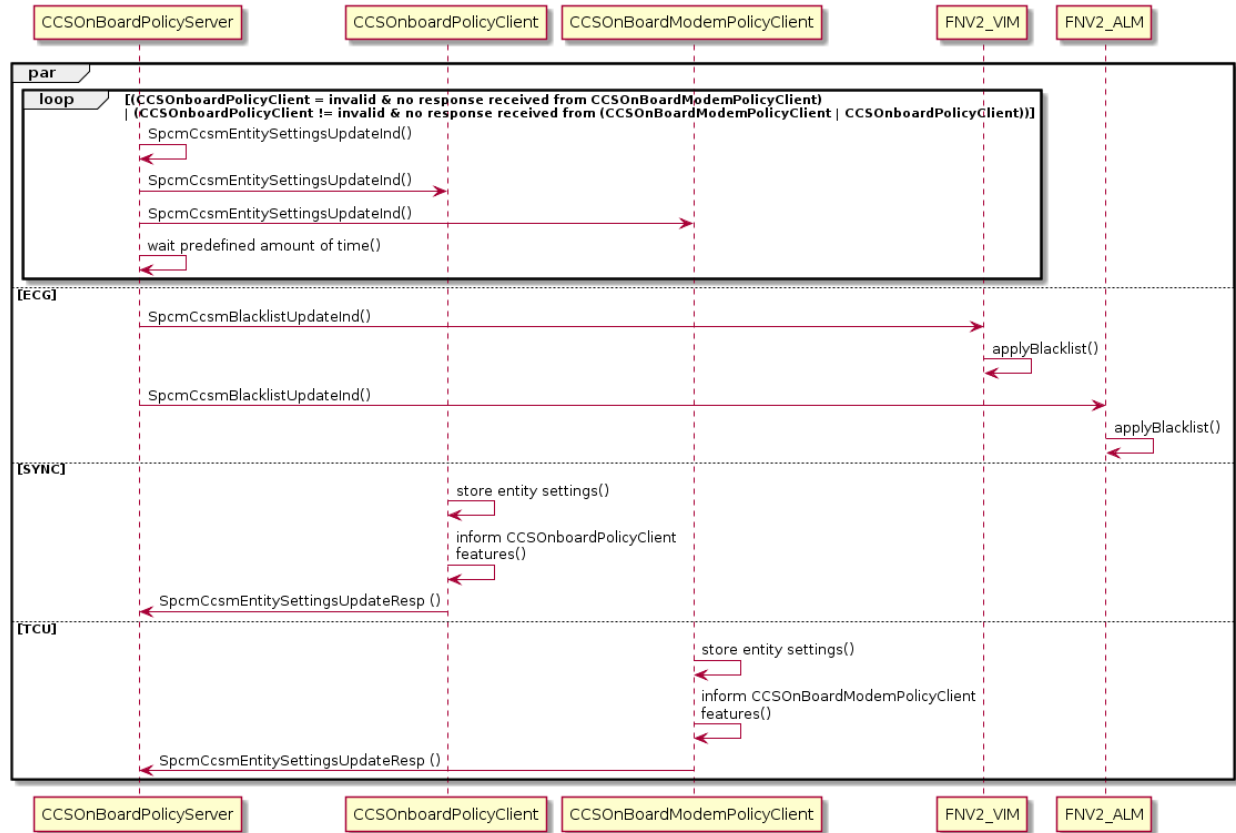### 3.3.5.2 CCOIv2-SD-REQ-358304/B-Synchronization

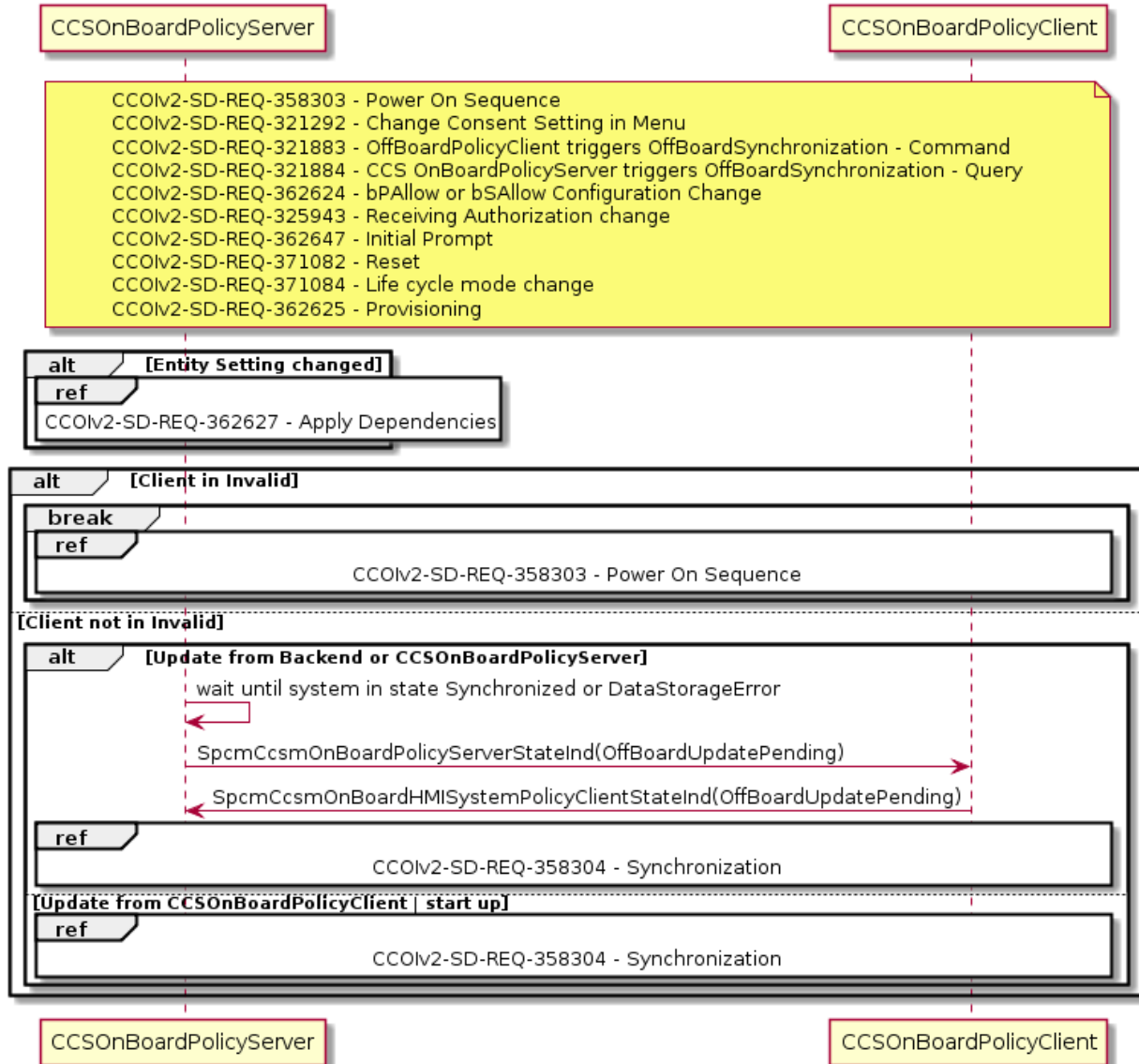### 3.3.5.3 *CCOIv2-SD-REQ-361332/B-SynchronizationFailed*

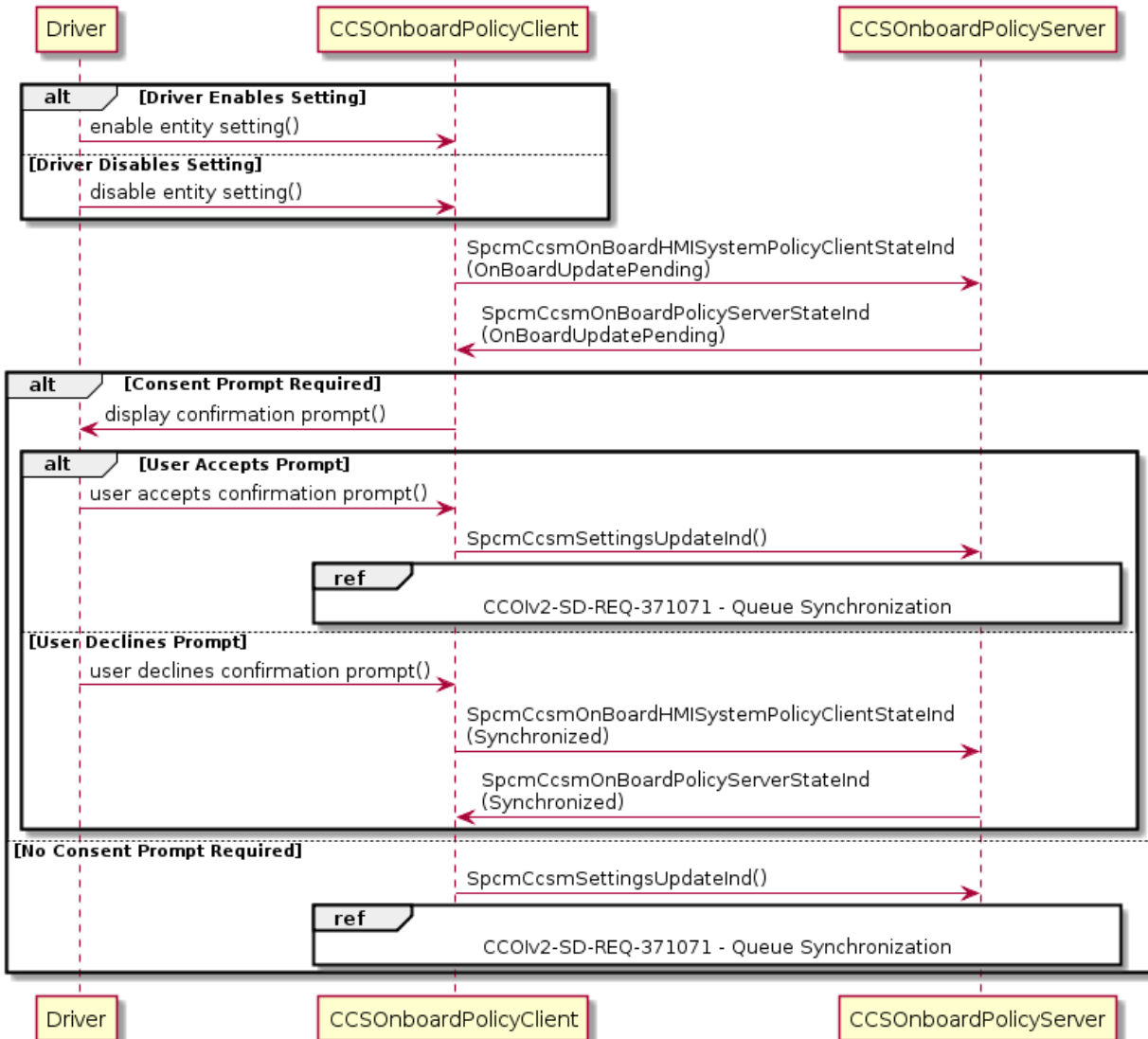### 3.3.5.4 *CCOIv2-SD-REQ-362628/B-Distribute Entity Settings and Blacklist*

### 3.3.5.5 CCOIv2-SD-REQ-371071/A-Queue Synchronization



CCSOnBoardPolicyServer      CCSOnBoardPolicyClient

CCOIv2-SD-REQ-358303 - Power On Sequence
CCOIv2-SD-REQ-321292 - Change Consent Setting in Menu
CCOIv2-SD-REQ-321883 - OffBoardPolicyClient triggers OffBoardSynchronization - Command
CCOIv2-SD-REQ-321884 - CCS OnBoardPolicyServer triggers OffBoardSynchronization - Query
CCOIv2-SD-REQ-362624 - bPAllow or bSAllow Configuration Change
CCOIv2-SD-REQ-325943 - Receiving Authorization change
CCOIv2-SD-REQ-362647 - Initial Prompt
CCOIv2-SD-REQ-371082 - Reset
CCOIv2-SD-REQ-371084 - Life cycle mode change
CCOIv2-SD-REQ-362625 - Provisioning

alt   [Entity Setting changed]
ref
CCOIv2-SD-REQ-362627 - Apply Dependencies

alt   [Client in Invalid]
break
ref
CCOIv2-SD-REQ-358303 - Power On Sequence

[Client not in Invalid]
alt   [Update from Backend or CCSOnBoardPolicyServer]
wait until system in state Synchronized or DataStorageError

SpcmCcsmOnBoardPolicyServerStateInd(OffBoardUpdatePending)

SpcmCcsmOnBoardHMISystemPolicyClientStateInd(OffBoardUpdatePending)

ref
CCOIv2-SD-REQ-358304 - Synchronization

[Update from CCSOnBoardPolicyClient | start up]
ref
CCOIv2-SD-REQ-358304 - Synchronization

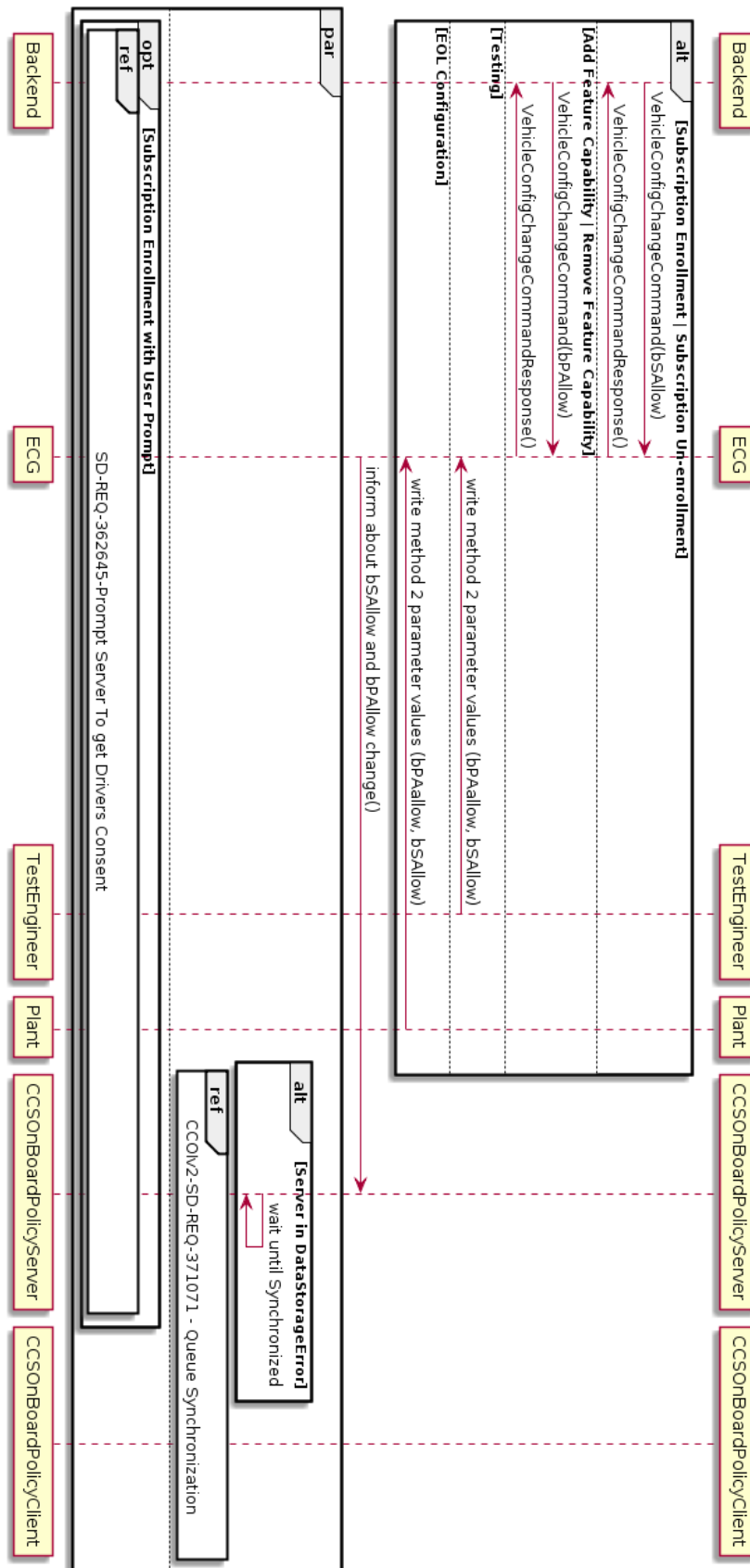CCSOnBoardPolicyServer      CCSOnBoardPolicyClient

### 3.3.5.6 *CCOIv2-SD-REQ-321292/D-Change Consent Setting in Menu*
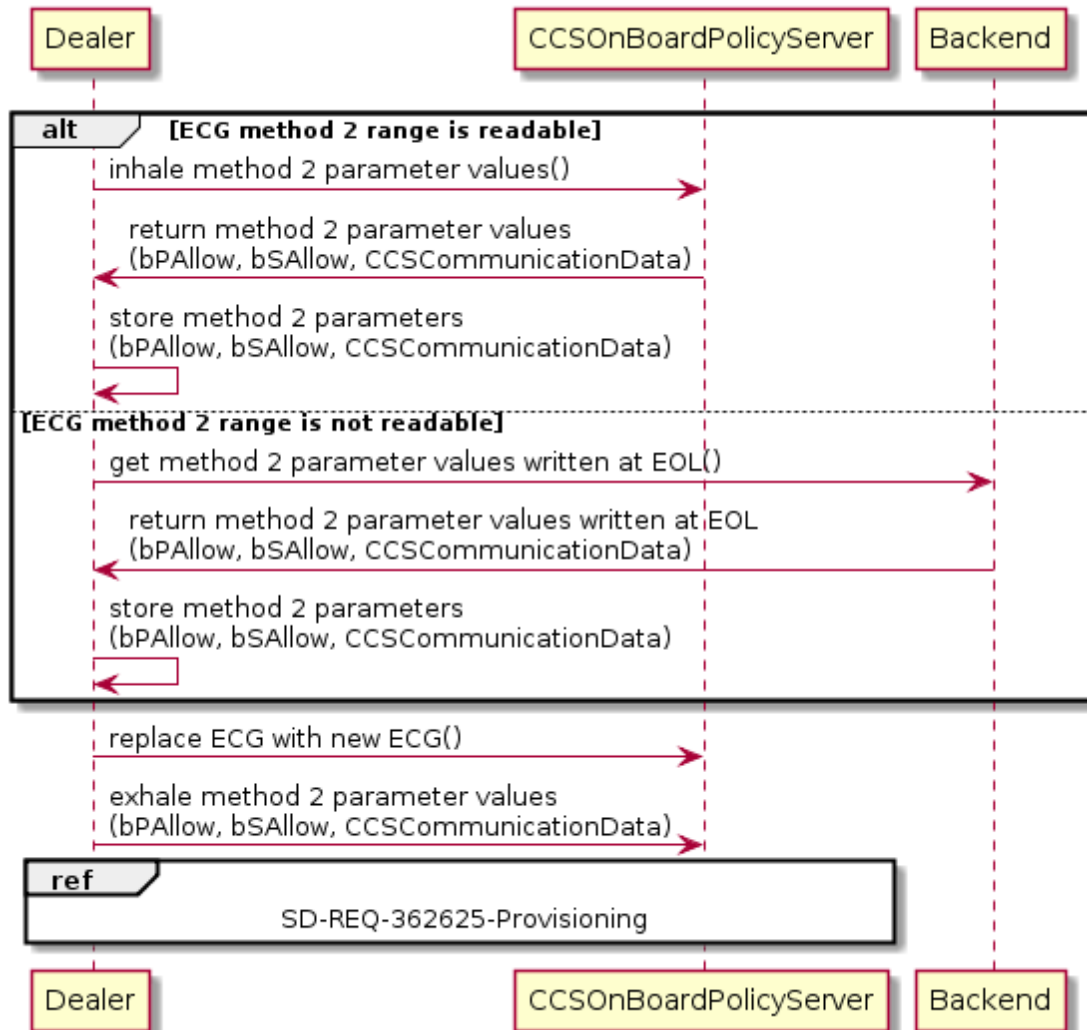
### 3.3.5.7    CCOIv2-SD-REQ-362624/B-bPAllow or bSAllow Configuration Change
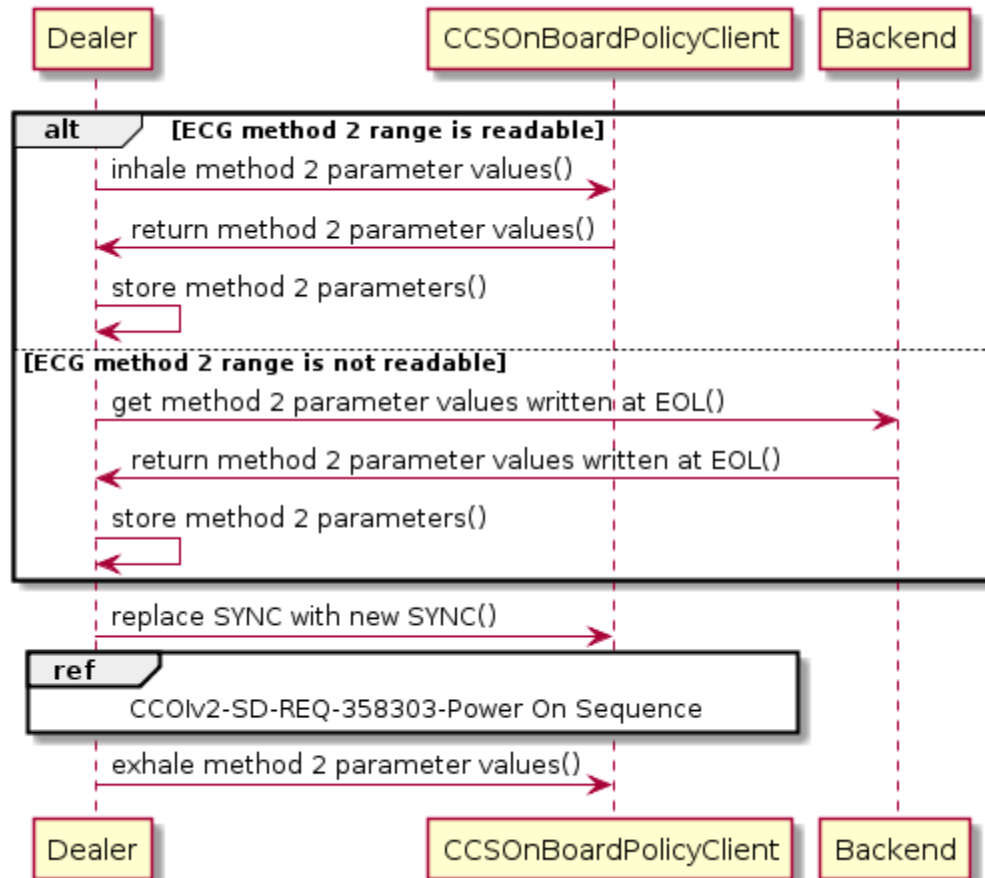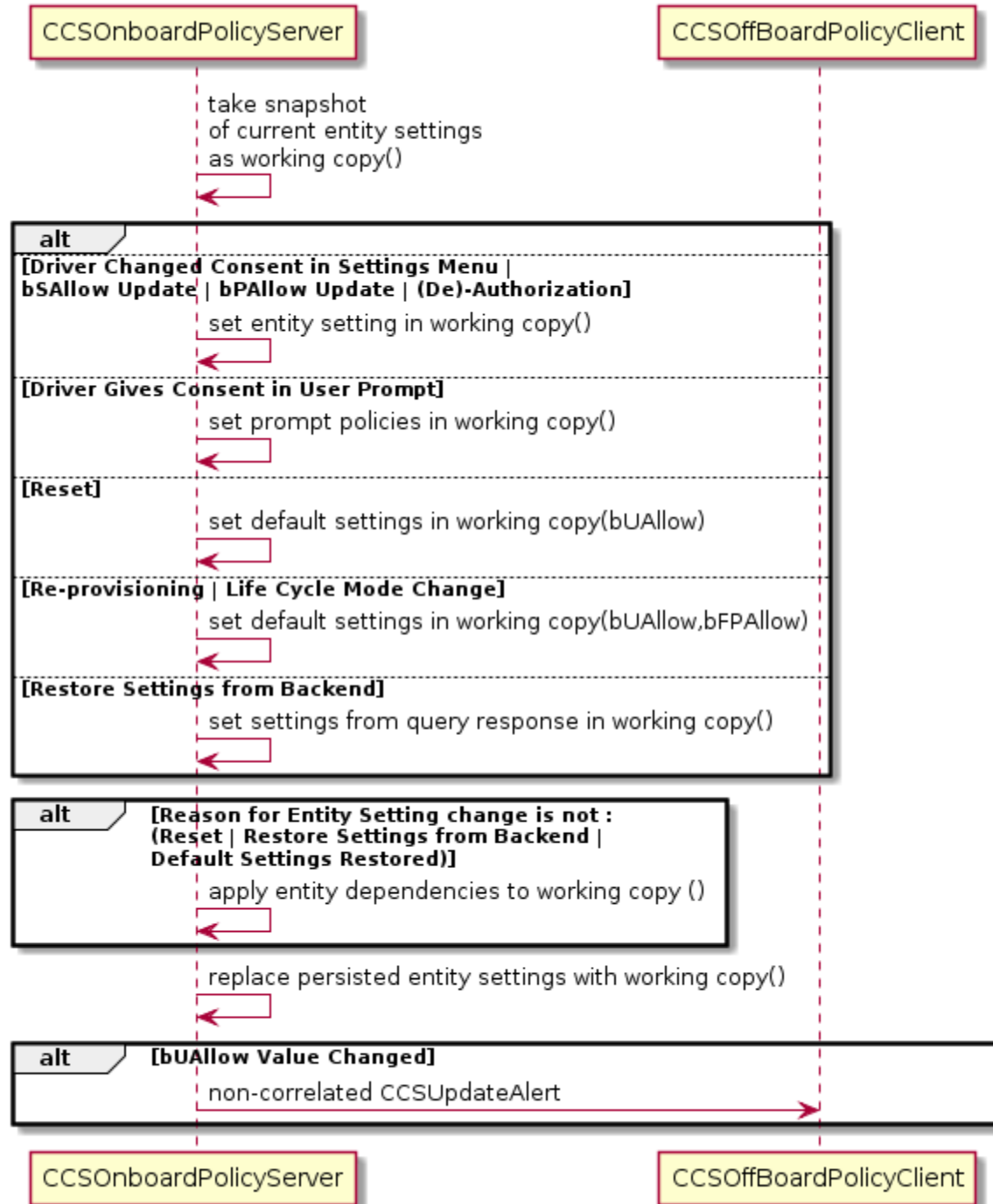
### 3.3.5.8 *CCOIv2-SD-REQ-362626/A-ECG Swap*
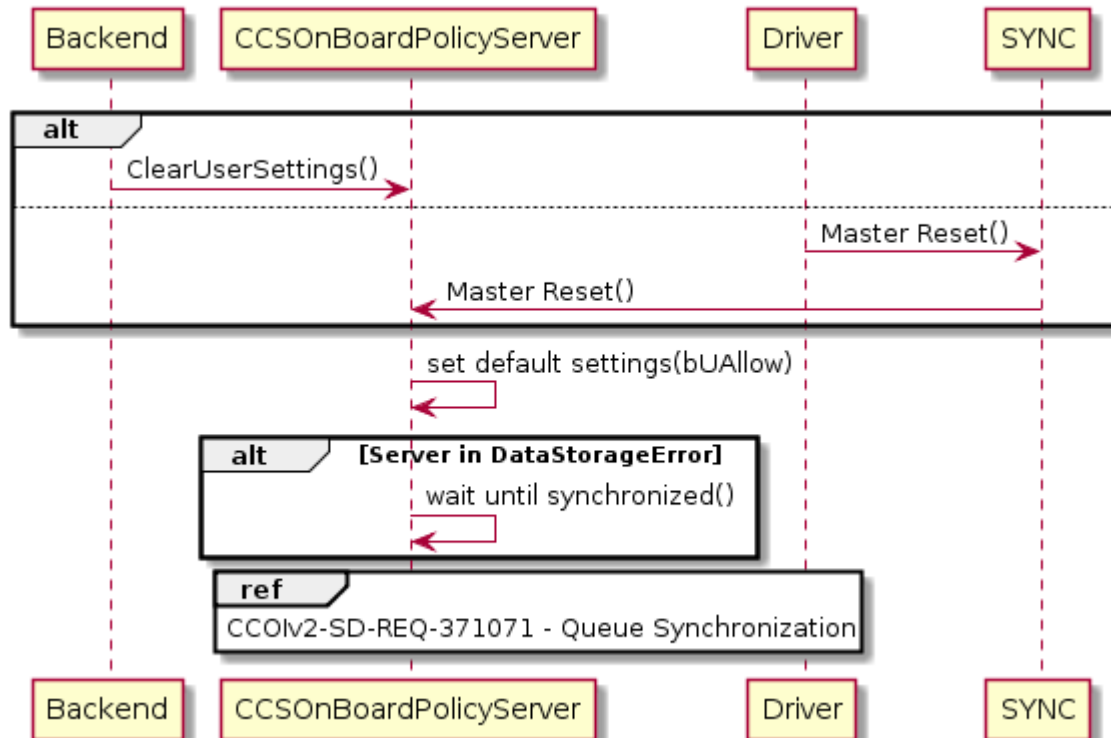
### 3.3.5.9    CCOIv2-SD-REQ-371654/A-SYNC Swap

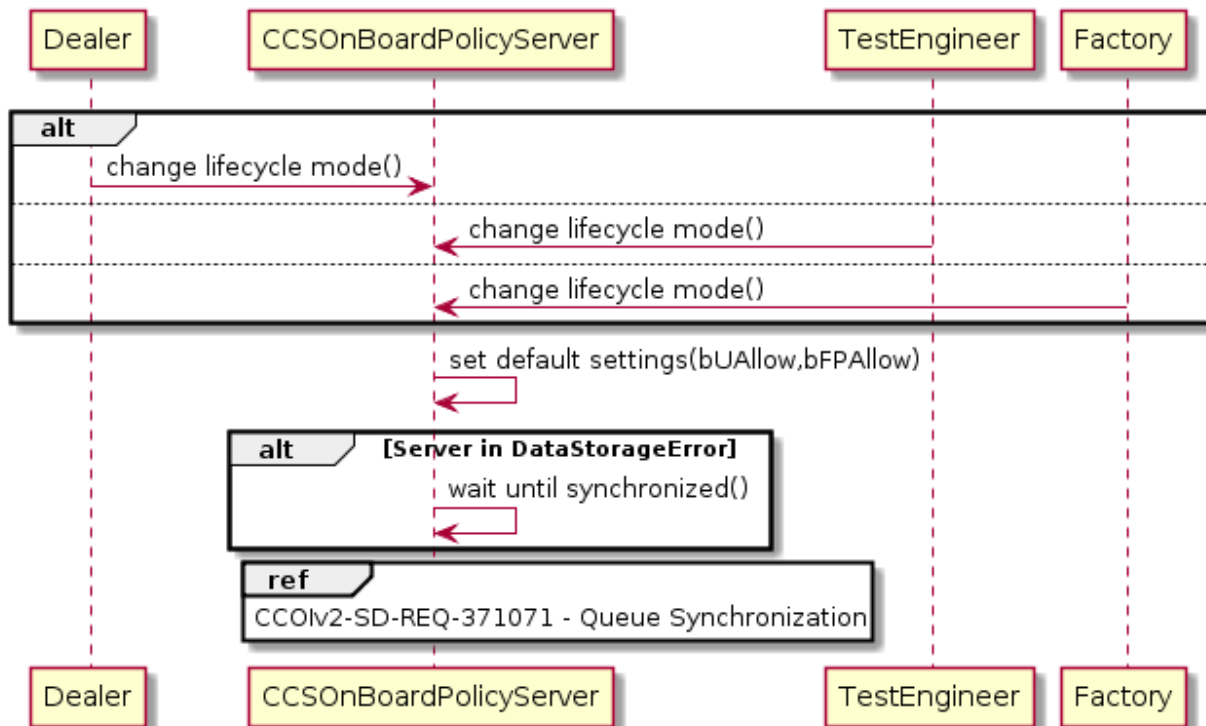### 3.3.5.10 *CCOIv2-SD-REQ-362627/B-Apply Dependencies*

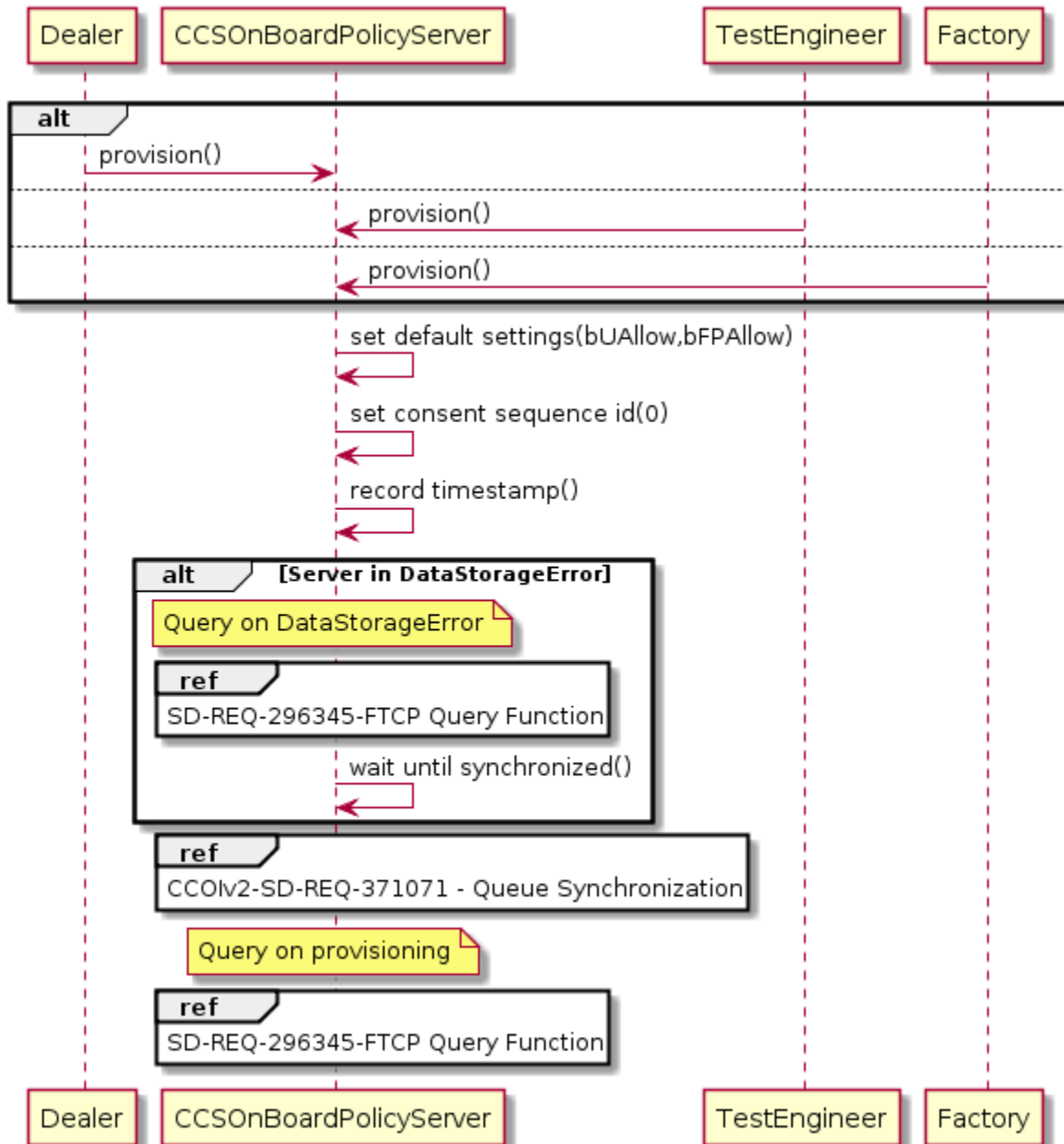### 3.3.5.11  *CCOIv2-SD-REQ-371082/A-Reset*



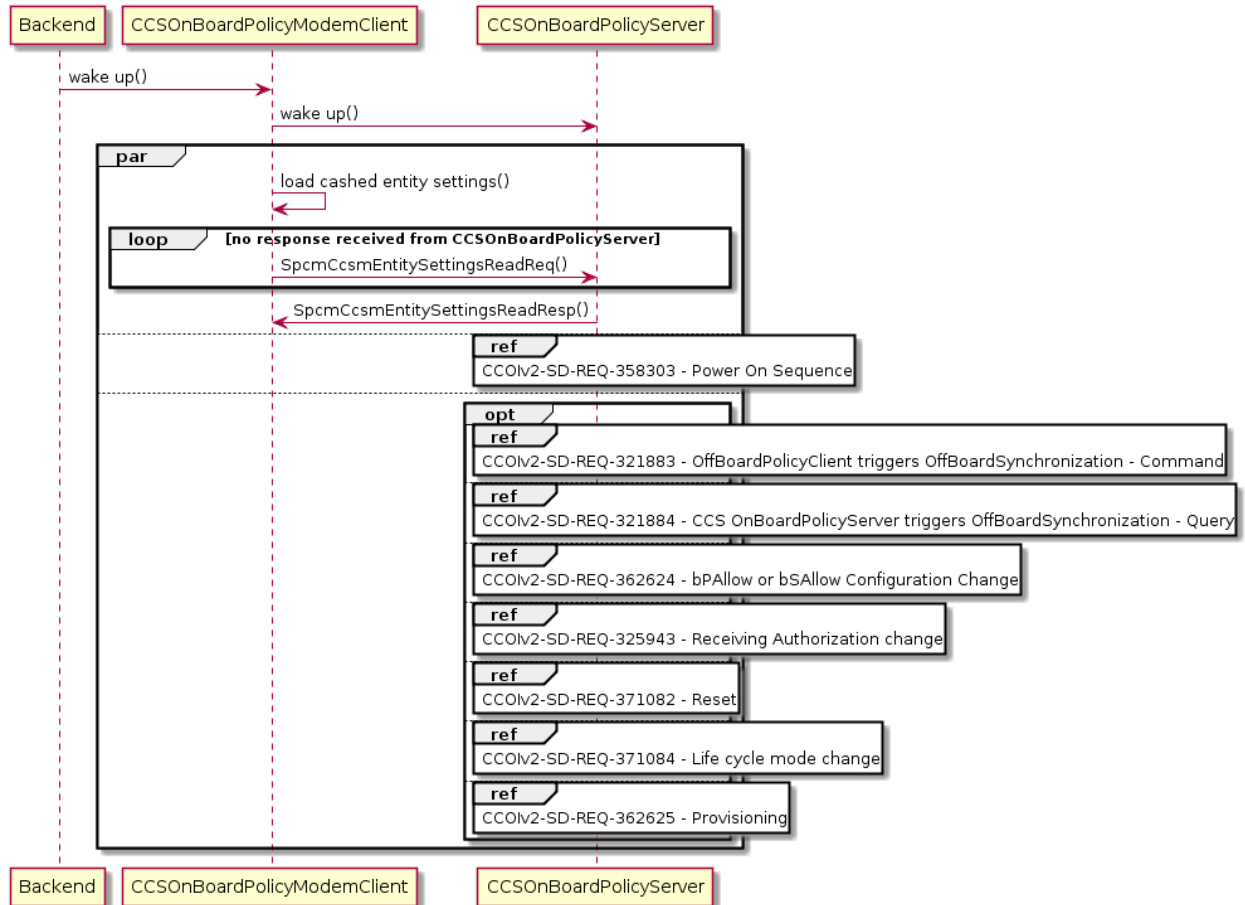### 3.3.5.12  *CCOIv2-SD-REQ-371084/A-Lifecycle Mode Change*

### 3.3.5.13 CCOIv2-SD-REQ-362625/B-Provisioning

### 3.3.5.14  CCOIv2-SD-REQ-372229/A-SMS Wake Up

## 3.4 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.

### 3.4.1 Use Cases

#### 3.4.1.1 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: <br> 2. ECG enforces policies <br>  2.1. VIM blocks application's access to information that a driver does not want to share <br>  2.2. ALM turns applications off that are disabled by the driver <br> 3. SYNC enforces policies <br>  3.1. Trusted Feature Applications don't send information off board that a driver does not want to share <br>  3.2. Feature Applications don't get access to information that a driver does not want to share <br> 4. TCU enforces policies <br>  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 | |

### 3.4.2 Requirements

#### 3.4.2.1 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.

#### 3.4.2.1.1 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.

*3.4.2.2   CCOIv2-REQ-362754/A-Connected Voice (Nuance)*

3.4.2.2.1   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

3.4.2.2.2   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

3.4.2.2.3   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.

3.4.2.2.4   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.

3.4.2.2.5   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.

### 3.4.2.2.6  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.

### *3.4.2.3  CCOIv2-REQ-362765/A-Analytics*

### 3.4.2.3.1  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.

### 3.4.2.3.2  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.

### 3.4.2.3.3  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.

### 3.4.2.3.4  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.

### *3.4.2.4    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.

#### 3.4.2.4.1    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.

### *3.4.2.5    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.

### *3.4.2.6    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.

### *3.4.2.7    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.

### *3.4.2.8    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).

## 3.5 CCOIv2-FUN-REQ-296182/A-CCS settings menu

### 3.5.1 Use Cases

#### 3.5.1.1 *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:<br>1a) CCS System is not synchronized<br>    .1 CCS menu is not accessible, error message will be shown |
| Interfaces | GUI |

#### 3.5.1.2 *CCOIv2-UC-REQ-296184/B-check entity settings*

| Actors | Driver, CCS Client |
|---|---|
| Pre-conditions | IGN On |
| Scenario Description | 1. Driver enters CCS menu<br>2. An entity allow bit changes (e.g. due to a change of an entity setting by the user)<br>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:<br>1a) CCS System is not synchronized<br>    .1 CCS menu is not accessible, error message is shown |
| Interfaces | GUI |

### 3.5.2 Requirements

#### 3.5.2.1 *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.

#### 3.5.2.2 *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.

#### 3.5.2.3 *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.

#### 3.5.2.4 *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.

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

### 3.6.1 Use Cases

#### 3.6.1.1 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 |

### 3.6.2 Requirements

#### 3.6.2.1 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.

#### 3.6.2.2 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.

*3.6.2.3  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.

3.6.2.3.1  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.

*3.6.2.4  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.

### 3.6.2.5  Policy Table Extension content definition

### 3.6.2.5.1  General explanations

3.6.2.5.1.1  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.

3.6.2.5.1.2  CCOIv2-REQ-318821/A-EntityType

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

- 2 – FUNCTION

### 3.6.2.5.1.3   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.

### 3.6.2.5.1.4   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.

### 3.6.2.5.1.5   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.

### 3.6.2.5.1.6   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.

### 3.6.2.5.1.7   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

### 3.6.2.5.1.8   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.

### 3.6.2.5.1.9   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".

### 3.6.2.5.1.10   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.

### 3.6.2.5.2  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.

### 3.6.2.5.3  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.

#### 3.6.2.5.3.1  CCOIv2-REQ-329004/C-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).

Note: country code changes only take effect in CCS when default settings are set. Changing the country code does not cause applying the default settings. Expected behavior is that the country code will never change post the EOL configuration.

#### 3.6.2.5.3.2  CCOIv2-REQ-329005/B-DefaultEntityLifecycleModeSettings

Defines the default values for the allow bit settings for bUAllow and bFPAllow depending on the life cycle modes (see CCOIv2-REQ-371625-Life Cycle Mode).
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.

#### 3.6.2.5.3.3  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

#### 3.6.2.5.3.4  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.

### 3.6.2.5.4    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.

#### 3.6.2.5.4.1    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

##### 3.6.2.5.4.1.1    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".

#### 3.6.2.5.4.2    CCOIv2-REQ-328928/B-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 (CCSOnBoardPolicyServer see REQ-371617-Diagnostic Parameters for Country Code, CCSOnBoardPolicyClient see REQ-371613-Diagnostic Parameter for Country Code) 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.

#### 3.6.2.5.4.3    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.

##### 3.6.2.5.4.3.1    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

##### 3.6.2.5.4.3.2    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}).

##### 3.6.2.5.4.3.3    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.

3.6.2.5.4.4   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.

3.6.2.5.4.5   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.

### *3.6.2.6    User Friendly Messages content definition*

3.6.2.6.1   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.

3.6.2.6.2   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.

3.6.2.6.3   CCOIv2-REQ-328950/A-displaySize

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

3.6.2.6.4   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".

3.6.2.6.5   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.

3.6.2.6.5.1   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.

3.6.2.6.5.1.1   CCOIv2-REQ-329016/A-textBody

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

3.6.2.6.5.1.2   CCOIv2-REQ-328959/A-infoText

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

3.6.2.6.5.1.3   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.

3.6.2.6.5.1.4   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.

3.6.2.6.5.2   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.

3.6.2.6.5.2.1   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

3.6.2.6.5.2.2   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.

3.6.2.6.5.2.3   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.

3.6.2.6.5.2.4   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.

3.6.2.6.5.2.5   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.

3.6.2.6.5.2.6   CCOIv2-REQ-328966/A-data_sharing_popup

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

3.6.2.6.5.3   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.

3.6.2.6.5.3.1   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.

3.6.2.6.5.3.2   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.

3.6.2.6.5.3.3   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 |

*3.6.2.6.5.3.3.1   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.

*3.6.2.6.5.3.3.2   CCOIv2-REQ-328973/B-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 (see REQ-371615-Diagnostic Parameter for Backup Start Passcode)

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

*3.6.2.6.5.3.3.3   CCOIv2-REQ-328974/B-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 (see REQ-371615-Diagnostic Parameter for Backup Start Passcode)
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.

3.6.2.6.5.4   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.

3.6.2.6.5.4.1   CCOIv2-REQ-328976/A-textBody

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

3.6.2.6.5.5   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.

3.6.2.6.5.5.1   CCOIv2-REQ-329133/A-textBody

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

3.6.2.6.6   CCOIv2-REQ-328977/B-ford_app

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

Ref. REQ-371614-Diagnostic Parameter for Vehicle Brand

3.6.2.6.7   CCOIv2-REQ-328978/B-lincoln_app

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

ref. REQ-371614-Diagnostic Parameter for Vehicle Brand

3.6.2.6.8   CCOIv2-REQ-328979/B-ford_brand

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

ref. REQ-371614-Diagnostic Parameter for Vehicle Brand

3.6.2.6.9   CCOIv2-REQ-328980/B-lincoln_brand

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

ref. REQ-371614-Diagnostic Parameter for Vehicle Brand

3.6.2.6.10   CCOIv2-REQ-328981/B-ford_modemName

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

ref. REQ-371614-Diagnostic Parameter for Vehicle Brand

3.6.2.6.11   CCOIv2-REQ-328982/B-lincoln_modemName

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

ref. REQ-371614-Diagnostic Parameter for Vehicle Brand

3.6.2.6.12   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.

3.6.2.6.13   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.

3.6.2.6.14   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

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

### 3.7.1 Use Cases

#### 3.7.1.1 *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 |

#### 3.7.1.2 *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 |

### 3.7.2 Requirements

#### 3.7.2.1 *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".

#### 3.7.2.2 *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).

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

### *3.7.2.4   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.

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

#### 3.7.2.5.1   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.

#### 3.7.2.5.2   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.

### *3.7.2.6   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.

### *3.7.2.7   CCOIv2-REQ-362920/B-Do not save devices when screen is deactivated*
If the display is deactivated, (e.g. user turned off display immediately after IGN, reverse view camera) 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.

### *3.7.2.8   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.

### *3.7.2.9   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.

### *3.7.2.10  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 |

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

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

### 3.7.3 Activity Diagrams

#### 3.7.3.1 CCOIv2-ACT-REQ-362930/A-User identification via paired/connected device for data sharing reminder Pop-Up
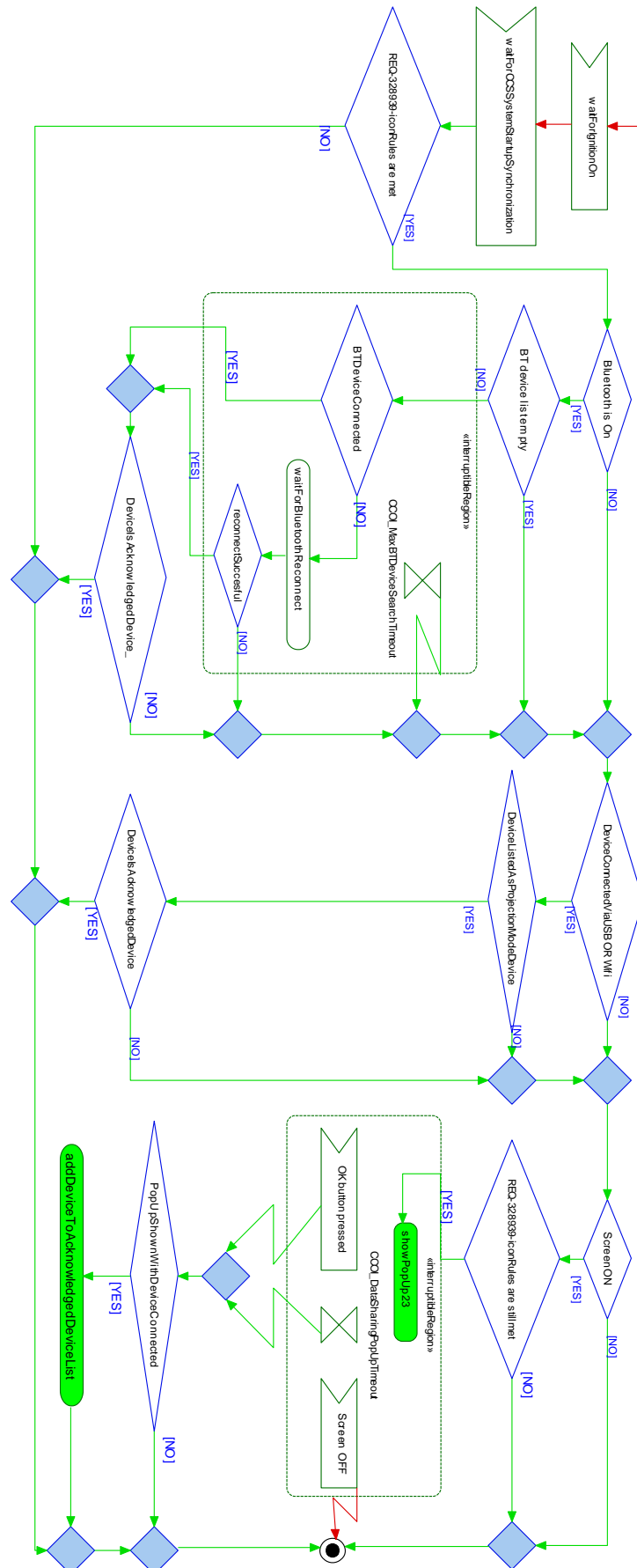
# 4 Appendix: Reference Documents

| 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" |