



Table of Contents

| | |
|--|----|
| Disclaimer | 1 |
| Scope | 2 |
| Terminology and Conventions | 2 |
| 0. Part 0 | 3 |
| 1. Part 1 | 4 |
| 2. Part 2 | 5 |
| 2.1. Page 13 - (2026-02) - Updated reference 17 and added new references | 5 |
| 2.2. Page 24 - (2026-02) - Inclusion of RFC 8441 for HTTP/2 | 5 |
| 2.3. Page 24 - (2026-02) - A00.FR.308 - Additional requirement references | 5 |
| 2.4. Page 26 - (2026-02) - A00.FR.403 - Additional requirement references | 6 |
| 2.5. Page 82 - (2026-04) - B12 - Reset with ongoing transaction allows wait for cable disconnection. | 6 |
| 2.6. Page 27 - (2026-02) - A00.FR.411 - Additional requirement references | 8 |
| 2.7. Page 37 - (2026-02) - A02.FR.02 - Requirement reference correction | 8 |
| 2.8. Page 41 - (2026-02) - A03.FR.02 - Requirement reference correction | 8 |
| 2.9. Page 41 - (2026-02) - A03.FR.02 Only applies in security profile 3 [1167] | 8 |
| 2.10. Page 283 - (2026-02) - I06.FR.03 - added note about privacy [715] | 9 |
| 2.11. Page 415 - (2026-04) - L01.FR.04 - removed ECSchnorr algorithm option and clarify the signature verification the Charging Station must do | 9 |
| 2.12. Page 502 - (2026-02) - Improved description of LocalLoadBalancing. | 9 |
| 2.13. Page 531 - (2026-02) - Use case Q09 has improved description of LocalLoadBalancing | 13 |
| 2.14. Page 533 - (2026-02) - Use case Q09 has improved sequence diagram. | 13 |
| 2.15. Page 534 - (2026-02) - Use case Q09 has improved requirements | 15 |
| 2.16. Page 666 - (2026-02) - Updated description of StreamDataElementType [1160] | 16 |
| 2.17. Page 792 - (2026-02) - New configuration variable AutoThresholds. | 16 |
| 3. Part 3 | 17 |
| 4. Part 4 | 18 |
| 4.1. Page 10 - (2026-02) - Update handling of unknown message type [1163] | 18 |
| 4.2. Page 14 - (2026-02) - Wrong example of NotifyPeriodicEventStream [1159] | 18 |
| 4.3. Page 16 - (2026-02) - MessageTypeNotSupported is deprecated [1161] | 18 |
| 4.4. Page 16 - (2026-02) - Section 4.4 Extension fallback mechanism removed [1163] | 18 |
| 5. Part 5 | 19 |
| 5.1. Page 20 - (2026-02) - TC_C_100_CS - Test case removed | 19 |
| 5.2. Page 60 - (2026-02) - TC_Q_102_CSMS - Test case removed | 19 |
| 5.3. Page 61 - (2026-02) - TC_R_101_CS - Test case removed | 19 |
| 6. Part 6 | 20 |
| 6.1. General. | 20 |
| 6.2. Charging Station. | 21 |
| 6.2.1. Page 23 - (2026-02) - TC_A_20_CS - Added note that the testcase will end when the SetNetworkProfile is rejected. . | 21 |
| 6.2.2. Page 57 - (2026-04) - TC_B_21_CS - Clarification of charging station reboot behaviour with ongoing transactions. . | 21 |
| 6.2.3. Page 65 - (2026-04) - TC_B_41_CS - Clarification of charging station reboot behaviour with ongoing transactions. . | 22 |
| 6.2.4. Page 91 - (2026-02) - TC_B_100_CS - Use active securityProfile level. | 24 |
| 6.2.5. Page 103/104 - (2026-02) - TC_B_108_CS - Added SetNetworkProfileRequest main steps. | 24 |
| 6.2.6. Page 105 - 107 - (2026-02) - TC_B_109_CS - Testcase updated. | 26 |
| 6.2.7. Page 130 - (2026-02) - TC_C_17_CS - Corrected wrong triggerReason [1113] | 29 |
| 6.2.8. Page 147 - (2026-02) - TC_C_38_CS - Removed memory state IdTokenCached [1164] | 29 |
| 6.2.9. Page 173/174 - (2026-02) - TC_C_26_CS - Clarification of main test and tool validation steps. | 30 |
| 6.2.10. Page 184 - (2026-02) - TC_C_100_CS - Test case removed | 31 |
| 6.2.11. Page 209 - (2026-02) - TC_C_121_CS - Added tool validations for triggerReason LimitSet | 31 |
| 6.2.12. Page 214 - (2026-02) - TC_C_124_CS and TC_C_128_CS to TC_C_130_CS - Corrected requirement reference and removed note. | 32 |
| 6.2.13. Page 294/295/296 - (2026-02) - TC_E_102_CS - Test case and tool validations corrected. | 32 |
| 6.2.14. Page 297/298 - (2026-02) - TC_I_119_CS - Added tool validations for totalCost.total | 35 |
| 6.2.15. Page 297/298 - (2026-02) - TC_E_103_CS - Test case and tool validation corrections. | 36 |
| 6.2.16. Page 301/302 - (2026-02) - TC_E_105_CS - Test case and tool validation corrections. | 37 |
| 6.2.17. Page 303/304 - (2026-02) - TC_E_106_CS - Test case and tool validation corrections | 39 |
| 6.2.18. Page 305/306 - (2026-02) - TC_E_107_CS - Tool validation clarifications. | 39 |

| | |
|---|----|
| 6.2.19. Page 313/314 - (2026-02) - TC_E_114_CS/TC_E_115_CS - Added main step to check the transaction is not resumed | 40 |
| 6.2.20. Page 610 - (2026-02) - TC_L_07_CS - Path to non-existent firmware updated | 41 |
| 6.2.21. Page 421 - (2026-02) - TC_L_107_CS - Used reusable state Authorized | 41 |
| 6.2.22. Page 424/425 - (2026-02) - TC_I_109_CS - Added reusable state EnergyTransferStarted | 42 |
| 6.2.23. Page 436 - (2026-02) - TC_I_115_CSMS - Added main steps TransactionEvent TariffChanged | 43 |
| 6.2.24. Page 455 - (2026-02) - TC_I_121_CS - Incorrect minCost / maxCost validations | 43 |
| 6.2.25. Page 658 - (2026-02) - TC_M_24_CS - GetCertificateStatusRequest is not intended to be sent for the V2G leaf certificate | 49 |
| 6.2.26. Page 783 - (2026-02) - TC_O_24_CS - Additions to tool validations | 49 |
| 6.2.27. Page 567/568/569 - (2026-02) - TC_K_116_CS - Updated limits to more practical ones and aligned chargingProfileIds | 50 |
| 6.2.28. Page 587 - (2026-02) - TC_K_125_CS Updated dynUpdateTime tool validations | 52 |
| 6.2.29. Page 588 - (2026-02) - TC_K_129_CS to TC_K_135_CS improvements | 52 |
| 6.2.30. Page 596 - (2026-02) - TC_K_136_CS - Fixed incorrect timezone usage | 52 |
| 6.2.31. Page 590 - (2026-02) - TC_K_130_CS to TC_K_135_CS - Reusable state Booted removed | 52 |
| 6.2.32. Page 596 - (2026-02) - TC_K_136_CS - Remove timezone configuration | 52 |
| 6.2.33. Page 664/665 - (2026-02) - TC_M_100_CS - Reduced amount of certificates sent | 53 |
| 6.2.34. Page 666 - (2026-02) - TC_M_101_CS - Removed AdditionalRootCertificateCheck note | 54 |
| 6.2.35. Page 749-752 - (2026-02) - TC_N_105_CS - Use existing monitoring configurations and check the disabled monitoring events are not sent | 54 |
| 6.2.36. Page 753/754 - (2026-02) - TC_N_106_CS - Use existing monitoring configurations and check the disabled monitoring events are not sent | 58 |
| 6.2.37. Page 755/756 - (2026-02) - TC_N_108_CS - Use existing monitoring configurations and check the disabled monitoring events are not sent | 60 |
| 6.2.38. Page 757/758 - (2026-02) - TC_N_109_CS - Use existing monitoring configurations | 62 |
| 6.2.39. Page 805/806 - (2026-02) - TC_O_101_CS - Manual action and reusable state Authorized added | 64 |
| 6.2.40. Page 814/815 - (2026-02) - TC_Q_102_CS - Made the testcase more flexible regarding the phases used and added step for NotifyEVChargingScheduleRequest | 65 |
| 6.2.41. Page 820/821 - (2026-02) - TC_Q_107_CS - Added missing main steps to complete the renegotiation flow | 66 |
| 6.2.42. Page 863/864 - (2026-02) - TC_Q_125_CS - Aligned with other V2X ISO 15115-20 / CHAdeMO testcases | 68 |
| 6.2.43. Page 809-878 - (2026-02) - TC_Q_1XX_CS - NotifyEVChargingNeeds also needs to be used for V2X with CHAdeMO | 70 |
| 6.2.44. Page 877 - (2026-02) - TC_Q_130_CS - Updated tool validation requestedEnergyTransfer | 72 |
| 6.2.45. Page 881 - (2026-02) - TC_R_101_CS - Test case removed | 72 |
| 6.2.46. Page 899 - (2026-02) - TC_R_108_CS - Use static curves to trigger, instead of configurable ones | 73 |
| 6.2.47. Page 902/903 - (2026-02) - TC_S_104_CS - Resolved editorial issues | 74 |
| 6.2.48. Page 904/905 - (2026-02) - TC_S_105_CS - Updated test case | 76 |
| 6.2.49. Page 916 - (2026-02) - Reusable state Booted now accepts StatusNotification Unavailable [1162] | 77 |
| 6.2.50. Page 949/952 - (2026-02) - EVConnectedPreSessionBatterySwapping/EVDisconnectedBatterySwapping - Updated tool validations | 78 |
| 6.2.51. Page 1207 - (2026-02) - TC_K_102_CS - Made the testcase useable with a real EV | 79 |
| 6.3. CSMS | 81 |
| 6.3.1. Page 877/878 - (2026-02) - TC_Q_130_CS - BPT manual actions updated | 81 |
| 6.3.2. Page 944 - (2026-02) - Reusable state Iso1511820V2xControlBpt - BPT manual actions updated | 81 |
| 6.3.3. Page 1100/1101 - (2026-02) - TC_E_117_CSMS - Updated prerequisites and SetChargingProfileRequest tool validations | 82 |
| 6.3.4. Page 1006 - (2026-02) - TC_B_105_CSMS - Manual action added | 83 |
| 6.3.5. Page 1002 - (2026-02) - TC_B_100_CSMS - Manual action added and tool validations updated | 83 |
| 6.3.6. Page 1007/1008 - (2026-02) - TC_B_116_CSMS | 83 |
| 6.3.7. Page 1038 - (2026-02) - TC_C_119_CSMS / TC_C_120_CSMS / TC_C_125_CSMS / TC_C_126_CSMS - Added missing triggerReason and stoppedReason | 84 |
| 6.3.8. Page 1046/1047 - (2026-02) - TC_C_131_CSMS - Use idToken from the RequestStartTransactionRequest, which contains the PspRef | 85 |
| 6.3.9. Page 1046/1048/1049 - (2026-02) - TC_C_131_CSMS/TC_C_132_CSMS/TC_C_133_CSMS - Sharedsecret configuration variable added | 85 |
| 6.3.10. Page 1094/1095 - (2026-02) - TC_E_110_CSMS - Added missing Authorization request to initiate transaction | 85 |
| 6.3.11. Page 1096/1097 - (2026-02) - TC_E_111_CSMS - Added missing Authorization request to initiate transaction | 87 |
| 6.3.12. Page 1333 - (2026-02) - TC_O_101_CSMS - Updated tool validations | 87 |

| | |
|--|----|
| 6.3.13. Page 1210 - (2026-02) - TC_K_109_CSMS - Additional test case steps added. | 88 |
| 6.3.14. Page 1304-1306 - (2026-02) - TC_N_102_CSMS/TC_N_103_CSMS - added without userinfo. | 89 |
| 6.3.15. Page 1336 - (2026-02) - TC_Q_102_CSMS - Test case removed. | 89 |
| 6.3.16. Page 1309 - (2026-02) - TC_N_105_CSMS - Install usable monitor and send a NotifyPeriodicEventStream. | 89 |
| 6.3.17. Page 1339/1340 - (2026-02) - TC_Q_107_CSMS - Test case updated. | 91 |
| 6.3.18. Page 1359 - (2026-02) - TC_R_107_CSMS - Removed NotifyDERStartStopRequest and added ReportDERControlRequest. | 93 |
| 6.3.19. Page 1365 - 1367 - (2026-02) - TC_S_103_CSMS - Test case updated. | 94 |

Disclaimer

Copyright © 2010 – 2026 Open Charge Alliance. All rights reserved.

This document is made available under the **Creative Commons Attribution-NoDerivatives 4.0 International Public License** (<https://creativecommons.org/licenses/by-nd/4.0/legalcode>).

Version History

| Version | Date | Description |
|---------|------------|---|
| 2026-04 | 2026-05-06 | Includes errata for Part 2, 4, 5 and 6 of OCPP 2.1 Edition 2. |
| 2026-02 | 2026-03-11 | Includes errata for Part 2, 4, 5 and 6 of OCPP 2.1 Edition 2. |
| 2025-11 | 2025-12-03 | Includes errata for Part 2 and 4 of OCPP 2.1 Edition 1. |
| 2025-09 | 2025-09-22 | Includes errata for Part 2 and 4 of OCPP 2.1 Edition 1. |
| 2025-06 | 2025-07-08 | Includes errata for Part 2 and 4 of OCPP 2.1 Edition 1. |

Scope

This document contains errata on the OCPP 2.1 documentation. These errata have to be read as an addition to the release of OCPP 2.1 Edition 2.

The errata do not affect any schemas of OCPP messages. Certain errata do contain changes to requirements or even new requirements, but only in cases where a requirement contains an obvious error and would not or could not be implemented literally. New requirements are only added when they were already implicitly there. These changes have been discussed in or were proposed by the Technology Working Group of the Open Charge Alliance.

The appendices of the OCPP specification can be updated without requiring a new OCPP release. This mainly concerns the components and variables of the OCPP device model, which can be extended with new components or variables, as long as they are optional.

Terminology and Conventions

Bold: when needed to clarify differences, bold text might be used.

The errata entries are sorted by page number of the affected section of the specification document. When an errata entry affects multiple parts of the specification, then the various changes are grouped together with subsections referring to the pages affected by those changes.

This is version 2026-04 of the errata. The errata of this version are marked with "(2026-04)" in the section title.

In some cases the issue number by which it was reported, is added in square brackets at the end of the section title, e.g. "[349]". For retrieval of the issue in the issue tracking system prefix the number with "OCPP20M", like "[OCPP20M-349]".

0. Part 0

Currently no new errata for OCPP 2.1 Edition 2 part 0.

1. Part 1

Currently no new errata for OCPP 2.1 Edition 2 part 1.

2. Part 2

2.1. Page 13 - (2026-02) - Updated reference 17 and added new references

Special Publication 800-57 updated with latest revision

| | Reference | Description | Note |
|-----|-----------|--|------|
| Old | [17] | National Institute of Standards and Technology. Special Publication 800-57 Part 1 Rev. 4, Recommendation for Key Management. January 2016. https://csrc.nist.gov/publications/detail/sp/800-57-part-1/rev-4/final | |
| New | [17] | National Institute of Standards and Technology. Special Publication 800-57 Part 1 Rev. 5, Recommendation for Key Management. May 2020. https://csrc.nist.gov/pubs/sp/800/57/pt1/r5/final | |

RFC 6818 defines certificate validation rules in A00.FR.308, A00.FR.403, and A00.FR.413.

| Reference | Description |
|-----------|--|
| [26] | RFC 6818. Updates to the Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile. https://tools.ietf.org/html/rfc6818 |
| [27] | European Cybersecurity Certification Group Sub-group on Cryptography, Agreed Cryptographic Mechanisms, Version 2.0, April 2025 https://certification.enisa.europa.eu/document/download/a845662b-ae0-484e-9191-890c4cfa7aaa_en?filename=ECCG%20Agreed%20Cryptographic%20Mechanisms%20version%202.pdf |

2.2. Page 24 - (2026-02) - Inclusion of RFC 8441 for HTTP/2

| No. | Type | Description |
|-----|-----------|--|
| 1 | Name | TLS with Basic Authentication |
| ... | | |
| 7 | Remark(s) | <p>TLS allows a number of configurations, not all of which provide sufficient security. The requirements below describe the configurations allowed for OCPP.</p> <p>The Charging Station should include the same header as used in Basic Auth RFC 2617, while requesting to upgrade the http connection to a websocket connection as described in RFC 6455 and RFC 8441 (HTTP/2). The server first needs to validate the Authorization header before upgrading the connection.</p> |

2.3. Page 24 - (2026-02) - A00.FR.308 - Additional requirement references

| | ID | Precondition | Requirement definition | Note |
|-----|------------|--------------|---|------|
| Old | A00.FR.308 | | The Charging Station SHALL verify the certification path of the CSMS's certificate according to the path validation rules established in Section 6 of [3]. | |
| New | A00.FR.308 | | The Charging Station SHALL verify the certification path of the CSMS's certificate according to the path validation rules established in Section 6 of [3] and Section 4 of [26] | |

2.4. Page 26 - (2026-02) - A00.FR.403 - Additional requirement references

| | ID | Precondition | Requirement definition | Note |
|-----|------------|--------------|---|------|
| Old | A00.FR.403 | | The CSMS SHALL verify the certification path of the Charging Station's certificate according to the path validation rules established in Section 6 of [3] | |
| New | A00.FR.403 | | The CSMS SHALL verify the certification path of the Charging Station's certificate according to the path validation rules established in Section 6 of [3] and Section 4 of [26] | |

2.5. Page 82 - (2026-04) - B12 - Reset with ongoing transaction allows wait for cable disconnection

New requirements have been added to clarify the expected behavior when a reset is requested during an ongoing transaction, including the requirement to allow waiting for cable disconnection before performing the reset. Requirements were further updated for clarity.

New requirement

| ID | Precondition | Requirement definition | Note |
|-----------|---|---|------|
| B12.FR.11 | B12.FR.03 AND The transaction(s) on the EVSE(s) are terminated | The Charging Station MAY wait for cable disconnection before initiating a reboot | |
| B12.FR.12 | B12.FR.07 AND The transaction on the EVSE is terminated | The Charging Station MAY wait for cable disconnection before initiating a reset of the EVSE | |
| B12.FR.13 | B12.FR.11 | The Charging Station SHALL reboot | |
| B12.FR.14 | B12.FR.12 | The Charging Station SHALL reset the EVSE | |

Changed requirement

| | ID | Precondition | Requirement definition | Note |
|-----|-----------|---|---|------|
| Old | B12.FR.01 | When the Charging Station receives a ResetRequest(OnIdle) AND a transaction is ongoing | The Charging Station SHALL respond with a ResetResponse(Scheduled) , to indicate whether the Charging Station will attempt to reset itself or EVSE after all transactions on Charging Station or EVSE have ended. | |
| New | B12.FR.01 | When the Charging Station receives a ResetRequest(OnIdle) AND a transaction is ongoing | The Charging Station SHALL respond with a ResetResponse(Scheduled) | |
| Old | B12.FR.02 | When the Charging Station receives a ResetRequest(Immediate) AND a transaction is ongoing | The Charging Station SHALL respond with a ResetResponse(Accepted) , to indicate whether the Charging Station will attempt to reset itself or EVSE. | |
| New | B12.FR.02 | When the Charging Station receives a ResetRequest(Immediate) AND a transaction is ongoing | The Charging Station SHALL respond with a ResetResponse(Accepted) | |

| | ID | Precondition | Requirement definition | Note |
|-----|-----------|---|---|------|
| Old | B12.FR.03 | If no <i>evseld</i> is supplied AND If any transaction is in progress and an OnIdle reset is received. | The transaction of the Charging Station SHALL be terminated normally, before the reboot, e.g. as in E06 - Stop Transaction . | |
| New | B12.FR.03 | B12.FR.01 AND If no <i>evseld</i> is supplied | The transaction of the Charging Station SHALL be terminated normally, before the reboot, e.g. as in E06 - Stop Transaction . | |
| Old | B12.FR.04 | If no <i>evseld</i> is supplied AND If any transaction is in progress and an Immediate Reset is received. | The Charging Station SHALL attempt to terminate any transaction in progress and send a TransactionEventRequest (eventType = Ended) message with <i>triggerReason</i> = <i>ResetCommand</i> and <i>transactionInfo.stoppedReason</i> = <i>ImmediateReset</i> for each terminated transaction before performing a reboot. | |
| New | B12.FR.04 | B12.FR.02 AND If no <i>evseld</i> is supplied | The Charging Station SHALL attempt to terminate any transaction in progress and send a TransactionEventRequest (eventType = Ended) message with <i>triggerReason</i> = <i>ResetCommand</i> and <i>transactionInfo.stoppedReason</i> = <i>ImmediateReset</i> for each terminated transaction before performing a reboot. | |
| Old | B12.FR.05 | If an Immediate Reset without <i>evseld</i> is received and the TransactionEventResponse is not received within timeout. | The Charging Station SHALL queue the TransactionEventRequest , reboot and resend the TransactionEventRequest after the reboot. | |
| New | B12.FR.05 | B12.FR.04 AND the TransactionEventResponse is not received within timeout. | The Charging Station SHALL queue the TransactionEventRequest , reboot and resend the TransactionEventRequest after the reboot. | |
| Old | B12.FR.07 | If an <i>evseld</i> is supplied AND If a transaction is in progress on the EVSE and an OnIdle reset is received. | The transaction on the EVSE SHALL be terminated normally, before the reset, e.g. as in E06 - Stop Transaction . | |
| New | B12.FR.07 | B12.FR.01 AND If an <i>evseld</i> is supplied | The transaction on the EVSE SHALL be terminated normally, before the reset, e.g. as in E06 - Stop Transaction . | |
| Old | B12.FR.08 | If an <i>evseld</i> is supplied AND If a transaction is in progress on the EVSE and an Immediate Reset is received. | The Charging Station SHALL attempt to terminate the transaction in progress on the EVSE and send a TransactionEventRequest (eventType = Ended) message with <i>triggerReason</i> = <i>ResetCommand</i> and <i>transactionInfo.stoppedReason</i> = <i>ImmediateReset</i> before resetting the EVSE. | |
| New | B12.FR.08 | B12.FR.02 AND If an <i>evseld</i> is supplied | The Charging Station SHALL attempt to terminate the transaction in progress on the EVSE and send a TransactionEventRequest (eventType = Ended) message with <i>triggerReason</i> = <i>ResetCommand</i> and <i>transactionInfo.stoppedReason</i> = <i>ImmediateReset</i> before resetting the EVSE. | |

2.6. Page 27 - (2026-02) - A00.FR.411 - Additional requirement references

| | ID | Precondition | Requirement definition | Note |
|-----|------------|--------------|---|------|
| Old | A00.FR.411 | | The Charging Station SHALL verify the certification path of the CSMS's certificate according to the path validation rules established in Section 6 of [3]. (Same as A00.FR.308) | |
| New | A00.FR.411 | | The Charging Station SHALL verify the certification path of the CSMS's certificate according to the path validation rules established in Section 6 of [3] and Section 4 of [26]. (Same as A00.FR.308) | |

2.7. Page 37 - (2026-02) - A02.FR.02 - Requirement reference correction

| | ID | Precondition | Requirement definition | Note |
|-----|-----------|--------------|---|------|
| Old | A02.FR.02 | | The Charging Station SHALL generate a new public / private key pair using one of the key generation functions described in Section 4.2.1.3 of [16]. | |
| New | A02.FR.02 | | The Charging Station SHALL generate a new public / private key pair using one of the key generation functions described in Section 8.1 of [27]. | |

2.8. Page 41 - (2026-02) - A03.FR.02 - Requirement reference correction

| | ID | Precondition | Requirement definition | Note |
|-----|-----------|--------------|---|------|
| Old | A03.FR.02 | | The Charging Station SHALL generate a new public / private key pair using one of the key generation functions described in Section 4.2.1.3 of [16]. | |
| New | A03.FR.02 | | The Charging Station SHALL generate a new public / private key pair using one of the key generation functions described in Section 8.1 of [27]. | |

2.9. Page 41 - (2026-02) - A03.FR.02 Only applies in security profile 3 [1167]

Creation of a new client certificate must only be done while operating with security profile 3, otherwise CSMS might refuse to sign a client certificate.

Changed requirement

| | ID | Precondition | Requirement definition | Note |
|-----|-----------|---|---|------|
| Old | A03.FR.02 | When the Charging Station detects that the current Charging Station certificate will expire in one month. | The Charging Station SHALL generate a new public / private key pair using one of the key generation functions described in Section 4.2.1.3 of [16]. | |

| | ID | Precondition | Requirement definition | Note |
|-----|-----------|--|---|------|
| New | A03.FR.02 | When the Charging Station is connected with security profile 3 AND detects that the current Charging Station certificate will expire in one month. | The Charging Station SHALL generate a new public / private key pair using one of the key generation functions described in Section 4.2.1.3 of [16]. | |

2.10. Page 283 - (2026-02) - I06.FR.03 - added note about privacy [715]

A note has been added about protecting privacy when showing messages.

| | ID. | Precondition | Requirements |
|-----|-----------|--------------|---|
| Old | I06.FR.03 | I06.FR.02 | The Charging Station SHALL display the updated tariff information to the EV Driver. |
| New | I06.FR.03 | I06.FR.02 | The Charging Station SHALL display the updated tariff information to the EV Driver. Note: Charging Station should take measures to protect the privacy of the EV Driver, for example by ensuring that only the authenticated user can view the message. |

2.11. Page 415 - (2026-04) - L01.FR.04 - removed ECSchnorr algorithm option and clarify the signature verification the Charging Station must do

| | ID. | Precondition | Requirements | Note |
|-----|-----------|--|--|--|
| Old | L01.FR.04 | When the Charging Station has successfully downloaded the new firmware | The signature SHALL be validated, by calculating the signature over the entire firmware file using the RSA-PSS or ECSchnorr algorithm for signing, and the SHA256 algorithm for calculating hash values. | |
| New | L01.FR.04 | When the Charging Station has successfully downloaded the new firmware | The charging station SHALL verify the signature from the UpdateFirmwareRequest with the hash over the entire received firmware file computed using the signature hash algorithm. | The RSA-PSS or ECDSA algorithm is used for signing. Please refer to section [certificate_properties] for more details about signature algorithms and computing hash values. |

2.12. Page 502 - (2026-02) - Improved description of LocalLoadBalancing

The section about OperationMode "LocalLoadBalancing" is replaced in its entirety by the following text.

OperationMode LocalLoadBalancing

OperationMode LocalLoadBalancing can be used to limit grid import and export of a home by charging or discharging an EV.

Only one measurement is assumed: the active power at the grid connection point (PCC), where import from the grid is positive and export to the grid is negative. This measured value already includes the EV power, as shown in below diagram.

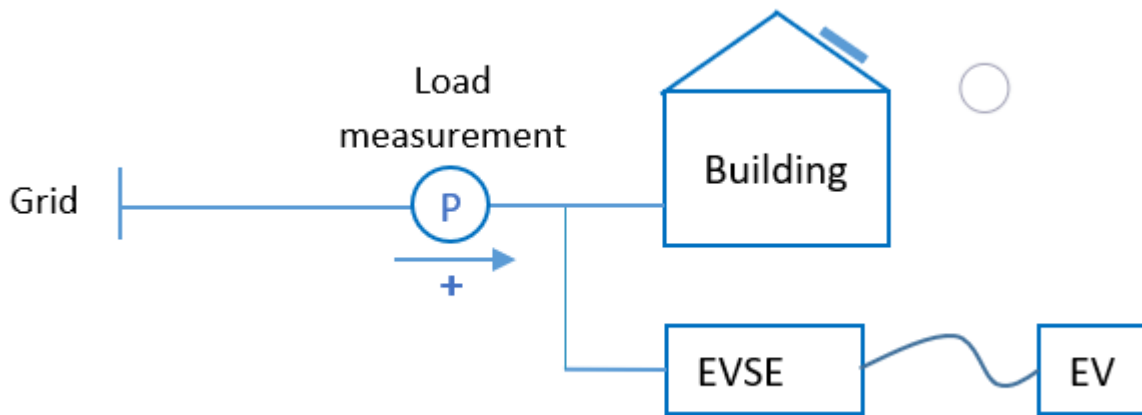


Figure 1. Diagram of a local load-balancing setup

Objective

The goal is to keep the measured grid power within an allowed range by using the EV as a buffer:

- Too much grid import \Rightarrow EV discharges
- Too much grid export \Rightarrow EV charges
- Inside the allowed range \Rightarrow EV does nothing

Because the EV power is already included in the grid measurement, the controller must work incrementally to avoid oscillations.

Thresholds and offsets

Two thresholds define the minimum EV action:

- **LowerThreshold** (negative): minimum discharging rate of the EV
- **UpperThreshold** (positive): minimum charging rate of the EV

Between these two values, the EV is not required to compensate the home load.

Offsets are used to shift or widen this neutral zone:

- **LowerOffset** is added to LowerThreshold
- **UpperOffset** is added to UpperThreshold

This results in the effective limits:

- Lower limit = LowerThreshold + LowerOffset
- Upper limit = UpperThreshold + UpperOffset

These limits define the allowed grid power band.

Controller behavior (conceptual)

At each control step:

1. Measure the grid power at the PCC (including EV).
2. Compare the measured value with the lower and upper limits.
3. Apply the following logic:
 - If grid power is below the lower limit (too much export): the EV increases charging power to raise grid power.
 - If grid power is above the upper limit (too much import): the EV increases discharging power to lower grid power.

◦ If grid power is inside the limits: the EV setpoint is left unchanged.

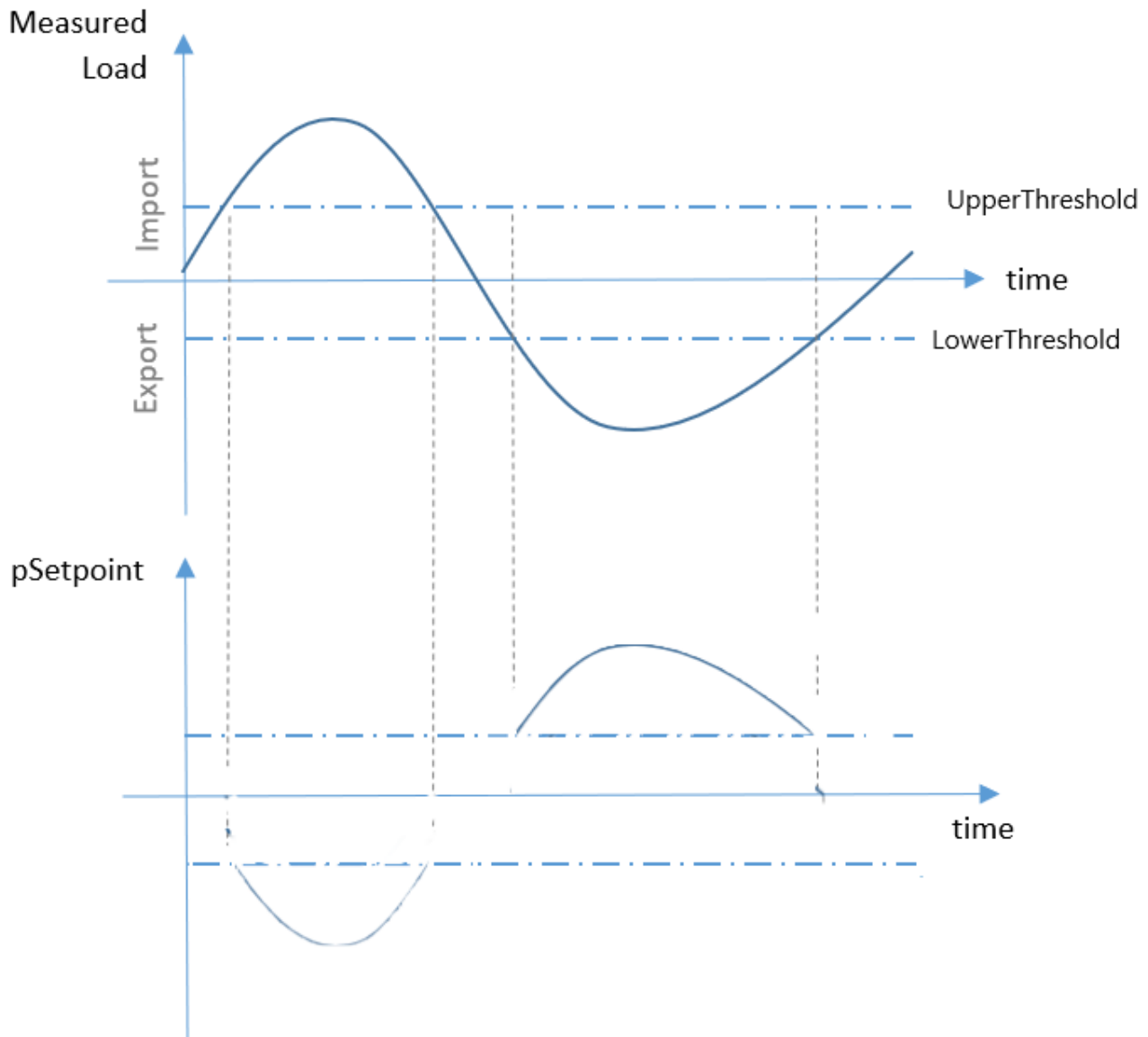


Figure 2. Graphs of measured load and compensating setpoint

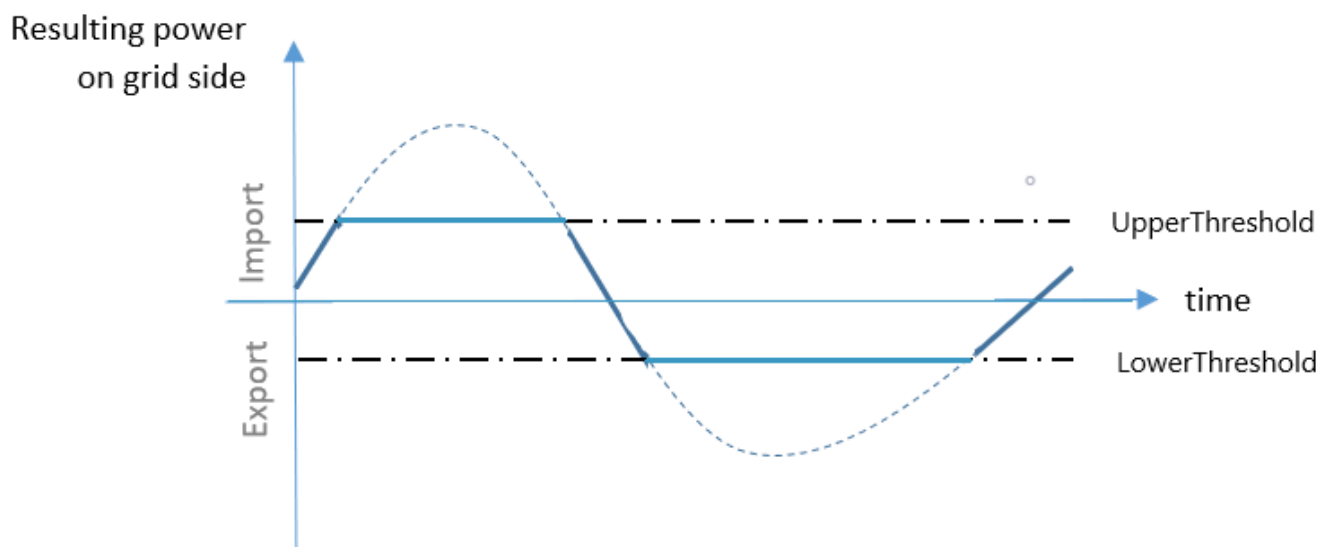


Figure 3. Graph of resulting power import/export

```
Load = get latest load power reading ()

If Load - Setpoint > UpperThreshold + UpperOffset - LowerThreshold
    Setpoint_new = Setpoint + UpperThreshold + UpperOffset - Load
Else If Load - Setpoint < LowerThreshold + LowerOffset - UpperThreshold
    Setpoint_new = Setpoint + LowerThreshold + LowerOffset - Load
Else
    Setpoint_new = 0
```

The EV setpoint is updated by adding the required correction to the previous setpoint, not by calculating an absolute value.

If the controller were to compute an absolute EV power directly from the grid measurement, it would continuously over-correct and oscillate. By adjusting the EV setpoint relative to its previous value, the controller converges in one step and remains stable.

Zero-import / zero-export operation

Although the thresholds define the **minimum** charging and discharging rates, the controller is not limited to those values:

- If grid power exceeds the limits by a large amount, the EV can compensate with more power than the threshold values.
- The further the grid power is outside the band, the stronger the correction.

This is what makes the EV an effective buffer for larger household loads.

Full compensation to 0 W grid power is possible by choosing the offsets as:

- LowerOffset = -LowerThreshold
- UpperOffset = -UpperThreshold

This moves both limits to 0 W.

Resulting behavior:

- Any grid import causes the EV to discharge.
- Any grid export causes the EV to charge.
- The controller continuously drives the net grid power toward zero, limited only by the EV's charging and discharging capabilities.

Relation with IEC 61850 DWFL

The `LocalLoadBalancing` control logic relates directly to the IEC 61850-7-420 logical node **DWFL** (Active Power Following).

From a functional perspective, the EV is following the grid power in order to counteract deviations beyond configured limits. This is exactly the problem DWFL was designed to solve. In IEC 61850-7-420, the logical node DWFL describes an active power following function.

Conceptually, DWFL:

- Observes a reference active power (what is actually happening)
- Has a target active power (what is desired)
- When the reference deviates beyond a threshold, it produces a compensation request to drive the system back toward the target

DWFL does not directly command a device; instead, it expresses how much power should change to follow the target.

2.13. Page 531 - (2026-02) - Use case Q09 has improved description of LocalLoadBalancing

| No. | Type | Description |
|-----|----------------------|---|
| 1 | Name | Local V2X control for load balancing |
| 2 | ID | Q09 |
| 3 | Objective | ... |
| 4 | Description | ... |
| | Actors | EV, Charging Station, CSMS |
| | Scenario description | <ol style="list-style-type: none"> 1. The CSMS has sent a [setchargingprofilerequest] message, with a <i>chargingSchedule</i> that has one or more periods with <i>operationMode</i> set to <i>LocalLoadBalancing</i>. 2. The Charging Station will continually get the latest load power reading to calculate a new <i>setpoint</i> that will offset the measured power generation or consumption, such that it stays between the configured upper and lower limit. <p>Configuration variables are instances of <i>V2XChargingCtrlr.LocalLoadBalancing</i>:</p> <ul style="list-style-type: none"> • The upper limit is defined as: $\text{UpperThreshold} + \text{UpperOffset}$. • The lower limit is defined as: $\text{LowerThreshold} + \text{LowerOffset}$. |
| 5 | Prerequisites | <ul style="list-style-type: none"> • Charging Station is able to read the upstream meter. • The configuration variable <i>UpperThreshold</i> (a positive value) should be equal or above the minimum charging rate of the EV. • The configuration variable <i>LowerThreshold</i> (a negative value) should be equal or below the minimum (as in "closest to zero") discharging rate of the EV. |
| 6 | Post conditions | ChargingSchedulePeriod ends |
| 7 | Error Handling | |
| 8 | Remarks | <p>By setting the configuration variable <i>UpperOffset</i> to $-\text{UpperThreshold}$ and <i>LowerOffset</i> to $-\text{LowerThreshold}$ the nett power will be regulated down to 0 W as soon as the building power exceeds the thresholds.</p> <p>See section [intro-localloadbalancing] in the introduction of this chapter for more detailed information on how local load-balancing works.</p> <p>This use case only works for one Charging Station, but can work for multiple EVSEs when Charging Station has the capability to combine setpoints from multiple EVSEs to compensate the measured load at the upstream meter.</p> <p>Local load-balancing by multiple Charging Stations would have to be coordinated by a CSMS or Local Controller using the Central Setpoint use case.</p> |

2.14. Page 533 - (2026-02) - Use case Q09 has improved sequence diagram

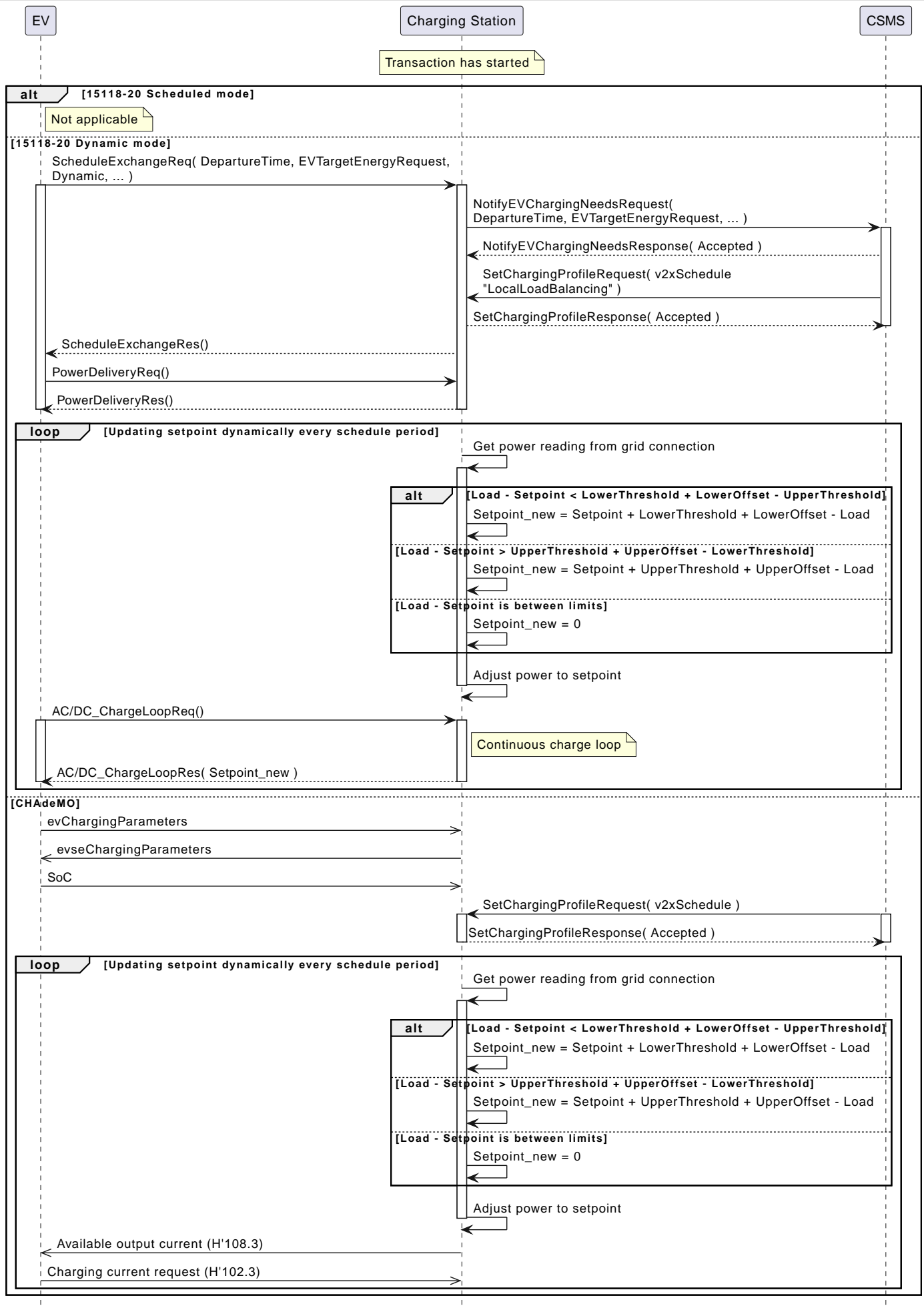


Figure 4. V2X Operation Mode LocalLoadBalancing

2.15. Page 534 - (2026-02) - Use case Q09 has improved requirements

Changed requirements

| | ID. | Precondition | Requirements | Note |
|-----|-----------|--|---|--|
| Old | Q09.FR.02 | When Charging Station receives a [setchargingprofilerequest] with a [cmn_chargingscheduleperiodtype] with <i>operationMode</i> = LocalLoadBalancing AND ((UpperThreshold or LowerThreshold are not set) OR (UpperOffset or LowerOffset are not set) OR (UpperThreshold is not greater than LowerThreshold)) | Charging Station SHALL respond with [setchargingprofileresponse] with <i>status</i> = Rejected and <i>statusInfo</i> = "MissingDevModelInfo" | |
| New | Q09.FR.02 | When Charging Station receives a [setchargingprofilerequest] with a [cmn_chargingscheduleperiodtype] with <i>operationMode</i> = LocalLoadBalancing AND AutoThresholds = <i>false</i> or not set AND ((UpperThreshold or LowerThreshold are not set) OR (UpperOffset or LowerOffset are not set) OR (UpperThreshold is not greater than LowerThreshold)) | Charging Station SHALL respond with [setchargingprofileresponse] with <i>status</i> = Rejected and <i>statusInfo</i> = "MissingDevModelInfo" | |
| Old | Q09.FR.04 | Q09.FR.03 | Charging Station SHALL calculate the power setpoint as follows: <pre> If Load > UpperThreshold DeltaSetpoint = UpperThreshold + UpperOffset - Load Else If Load < LowerThreshold DeltaSetpoint = LowerThreshold + LowerOffset - Load Else DeltaSetpoint = 0 setpoint = setpoint + DeltaSetpoint </pre> | "Load" is power from upstream meter. Positive values for consumption of energy. |
| New | Q09.FR.04 | Q09.FR.03 | Charging Station SHALL calculate the power setpoint for EV such that the power reported by the upstream grid meter in steady state is reduced to a value between UpperThreshold + UpperOffset and LowerThreshold + LowerOffset . | See section [intro-localloadbalancing] for an example algorithm that can be used for this. |

New requirement

| ID. | Precondition | Requirements | Note |
|---------------|---------------------------------------|---|---|
| Q09.F R.06 | If <code>AutoThresholds = true</code> | Charging Station SHALL set * <code>UpperThreshold = minChargePower,</code> * <code>LowerThreshold = -minDischargePower,</code> * <code>UpperOffset = -UpperThreshold,</code> * <code>LowerOffset = -LowerThreshold</code> where <code>minChargePower</code> and <code>minDischargePower</code> are values from <code>[notifyevchargingneedsrequest]</code> | This will automatically regulate grid power down to 0 W while taking into account the minimum charging/discharging rates of the EV. |

2.16. Page 666 - (2026-02) - Updated description of StreamDataElementType [1160]

Added the unit (seconds) to description of `t`.

StreamDataElementType

| Field Name | Field Type | Card. | Description |
|----------------|-----------------|-------|--|
| <code>t</code> | decimal | 1..1 | Required. Offset in seconds relative to <i>basetime</i> of this message. <i>basetime</i> + <i>t</i> is timestamp of recorded value. |
| <code>v</code> | string[0..2500] | 1..1 | Required. |

2.17. Page 792 - (2026-02) - New configuration variable AutoThresholds

`V2XLocalLoadBalancing[AutoThresholds]`

New in OCPP 2.1

| | | | |
|--------------------|---|--------------------|-----------|
| Required | no | | |
| Component | componentName | V2XChargingCtrlr | |
| | evse | * | |
| Variable | variableName | LocalLoadBalancing | |
| | variableInstance | AutoThresholds | |
| | variableAttributes | mutability | ReadWrite |
| | variableCharacteristics | dataType | boolean |
| Description | When set to <i>true</i> , this will automatically set the value of <code>UpperThreshold</code> to the minimum charging power of the EV (<code>minChargePower</code>) and the value of <code>LowerThreshold</code> to the minus the minimum discharging rate (<code>minDischargePower</code>) from the <code>NotifyEVChargingNeedsRequest</code> message. This ensures that the load balancing algorithm will not provide setpoints that cannot be achieved by EV. | | |

3. Part 3

Currently no new errata for OCPP 2.1 part 3.

4. Part 4

4.1. Page 10 - (2026-02) - Update handling of unknown message type [1163]

The sentence about ignoring unknown message types has been improved slightly. It mentioned to ignore the message payload, but the intention was to ignore the entire message.

| | |
|---------------|---|
| Old paragraph | When a system receives a message with a Message Type Number not in this list, it SHALL ignore the message payload. Each message type may have additional required fields. |
| New paragraph | When a system receives a message with a Message Type Number not in this list, it SHALL ignore the message payload . Each message type may have additional required fields. |

4.2. Page 14 - (2026-02) - Wrong example of NotifyPeriodicEventStream [1159]

Chapter 4.2.4 on page 14 shows an example RPC of the "NotifyPeriodicEventStream" action - they payload of which does not match the JSON schema.

The correct example is:

```
[ 6,
  "19223201",
  "NotifyPeriodicEventStream",
  {
    "id": 123,
    "pending": 0,
    "basetime" = "2024-08-27T12:30:40Z",
    "data": [ { "t": 0, "v": "230.4" }, { "t": 5, "v": "230.2" } ]
  }
]
```

4.3. Page 16 - (2026-02) - MessageTypeNotSupported is deprecated [1161]

As of OCPP 2.1 a message type number that is not supported is silently ignored, as described in section 4.4. This is therefore no longer a valid error code.

Valid Error Codes

| ErrorCode | Description |
|-------------------------|--|
| ... | ... |
| MessageTypeNotSupported | (deprecated) A message with a Message Type Number that is not supported by this implementation. |
| ... | ... |

4.4. Page 16 - (2026-02) - Section 4.4 Extension fallback mechanism removed [1163]

Section 4.4 "Extension fallback mechanism" mentions the same as section 4.1, which states to ignore unknown message types. It has therefore been removed.

5. Part 5

5.1. Page 20 - (2026-02) - TC_C_100_CS - Test case removed

This testcases has been removed, because it duplicates TC_E_05_CS.

5.2. Page 60 - (2026-02) - TC_Q_102_CSMS - Test case removed

This testcases has been removed, because as a CSMS cannot be forced to omit the energyModes. In addition, there is also no added benefit to test this.

5.3. Page 61 - (2026-02) - TC_R_101_CS - Test case removed

This testcases has been removed, because TC_B_53_CS will be responsible for performing all device model validations.

6. Part 6

6.1. General

Currently no errata for Part 6 General.

6.2. Charging Station

6.2.1. Page 23 - (2026-02) - TC_A_20_CS - Added note that the testcase will end when the SetNetworkProfile is rejected

| | |
|----------------|--|
| Test case name | Upgrade Charging Station Security Profile - No valid CSMSRootCertificate installed |
| Test case Id | TC_A_20_CS |
| ... | |

| Main (Test scenario) | |
|--|---|
| Charging Station | CSMS |
| 2. The Charging Station responds with a SetNetworkProfileResponse | 1. The Test System sends a SetNetworkProfileRequest with - configurationSlot is <Configured configurationSlot2> or <Configured configurationSlot> (the one currently not used for the active connection) - connectionData.messageTimeout <Configured messageTimeout2> - connectionData.ocppCsmsUrl <ocppCsmsUrl that is not currently active> - connectionData.ocppInterface <Configured ocppInterface2> - connectionData.ocppVersion OCPP20 - connectionData.securityProfile <Configured securityProfile2> |
| Note: If the Charging Station responds with a SetNetworkProfileResponse with status Rejected, then step 3/4 will not be executed. | |
| 4. The Charging Station responds with a SetVariablesResponse | 3. The Test System sends a SetVariablesRequest with variable.name is "NetworkConfigurationPriority" component.name is "OCPPCommCtrlr" attributeValue is <configurationSlot set at step 1>,<previous configurationSlot> |

6.2.2. Page 57 - (2026-04) - TC_B_21_CS - Clarification of charging station reboot behaviour with ongoing transactions

The test case has been updated to provide clarity on when the charging station is allowed to reboot. The charging station is expected to reboot either after the transaction has ended or if the transaction ends before the cable is disconnected, once the cable is disconnected.

| | |
|----------------|--|
| Test case name | Reset Charging Station - With Ongoing Transaction - OnIdle |
| Test case Id | TC_B_21_CS |

| Before (Preparations) |
|--|
| Configuration State: N/a |
| Memory State: N/a |
| Reusable State(s): State is <i>EnergyTransferStarted</i> |

| Main (Test scenario) | |
|--|--|
| Charging Station | CSMS |
| 2. The Charging Station responds with a ResetResponse | 1. The Test System sends a ResetRequest with type OnIdle |
| 3. Execute Reusable State <i>StopAuthorized</i> | |

| |
|--|
| Main (Test scenario) |
| <p>Notes(s): If the TxStopPoint contains EnergyTransfer, PowerPathClosed, or Authorized: The test system will wait the <Configured Long Operation Time Out> to determine if the charging station resets because the transaction has ended.</p> <p>If the charging station resets proceed to step 7. Else proceed with step 4.</p> <p>4. Execute Reusable State <i>EVConnectedPostSession</i></p> <p>5. Execute Reusable State <i>EVDisconnected</i></p> <p>Notes(s): Steps 4 and 5 will only be executed if TxStartPoint does not contain: EnergyTransferStarted, DataSigned, PowerPathClosed, or Authorized</p> <p>Notes(s): Step 6 will only be executed if TxStartPoint does not contain: EnergyTransferStarted, DataSigned, PowerPathClosed, Authorized, or EVConnected is ParkingBayOccupancy</p> <p>...</p> |

| |
|---|
| Tool validations |
| <p>* Step 2: Message ResetResponse - status Scheduled</p> <p>* Step 7: Message BootNotificationRequest - reason ScheduledReset</p> <p>* Step 9: Message: StatusNotificationRequest - If the transaction was stopped charging station reset at step 3, then – for the connector involved in the transaction: connectorStatus Occupied – for other connectors of this EVSE: connectorStatus Available or Unavailable Else connectorStatus Available Message: NotifyEventRequest - eventData[0].trigger Delta - eventData[0].component.name "Connector" - eventData[0].variable.name "AvailabilityState" - If the transaction was stopped charging station reset at step 3, then – for the connector involved in the transaction: eventData[0].actualValue Occupied – for other connectors of this EVSE: eventData[0].actualValue Available or Unavailable - Else eventData[0].actualValue "Available"</p> <p>* Step 11: Message: SecurityEventNotificationRequest - type StartupOfTheDevice or ResetOrReboot</p> <p>Post scenario validations: - A message to report the state of a connector has been received for all connectors.</p> |

6.2.3. Page 65 - (2026-04) - TC_B_41_CS - Clarification of charging station reboot behaviour with ongoing transactions

The test case has been updated to provide clarity on when the charging station is allowed to reboot. The charging station is expected to reboot either after the transaction has ended or if the transaction ends before the cable is disconnected, once the cable is disconnected.

| | |
|-----------------------|--|
| Test case name | Reset Charging Station - With multiple ongoing transactions - OnIdle |
| Test case Id | TC_B_41_CS |

| | |
|-----------------------------|------|
| Main (Test scenario) | |
| Charging Station | CSMS |

| | |
|--|--|
| Main (Test scenario) | |
| 2. The Charging Station responds with a ResetResponse | 1. The Test System sends a ResetRequest with type OnIdle |
| 3. Execute Reusable State StopAuthorized for EVSE.id = 1 | |
| 4. Execute Reusable State EVConnectedPostSession for EVSE.id = 1 | |
| 5. Execute Reusable State EVDisconnected for EVSE.id = 1 | |
| 6. Execute Reusable State ParkingBayUnoccupied for EVSE.id = 1 | |
| Notes(s): The test system will wait the configured max timeout period to ensure the charging station does not reboot at this point. | |
| 7. Execute Reusable State StopAuthorized for EVSE.id = 2 | |
| Notes(s): If the TxStopPoint contains EnergyTransfer, PowerPathClosed, or Authorized: The test system will wait the <Configured Long Operation Time Out> to determine if the charging station resets because the transaction has ended. | |
| If the charging station resets proceed to step 11. Else proceed with step 8. | |
| 8. Execute Reusable State EVConnectedPostSession for EVSE.id = 2 | |
| Note(s): If TxStopPoint contains one of the following values; Authorized, EnergyTransfer, PowerPathClosed, DataSigned. Then the transaction will have ended at the EVConnectedPostSession state AND the Charging Station will proceed with resetting itself. Proceed to step 11. Else proceed with step 9. | |
| 9. Execute Reusable State EVDisconnected for EVSE.id = 2 | |
| Note(s): If TxStopPoint contains the value EVConnected. Then the transaction will have ended at the EVDisconnected state AND the Charging Station will proceed with resetting itself. Proceed to step 11. Else proceed with step 10. | |
| 10. Execute Reusable State ParkingBayUnoccupied for EVSE.id = 2 | |
| Note(s): The transaction will end at this state, if it was not ended at an earlier state. Proceed to step 11. | |
| Notes(s): Step 10 will only be executed if TxStopPoint is ParkingBayOccupancy | |
| 11. The Charging Station sends a BootNotificationRequest | 12. The Test System responds with a BootNotificationResponse |
| 13. The Charging Station notifies the CSMS about the current state of all connectors. | 14. The Test System responds accordingly. |

| Tool validations |
|--|
| <p>* Step 2: Message ResetResponse - status <i>Scheduled</i></p> <p>* Step 11: Message BootNotificationRequest - reason <i>ScheduledReset</i></p> <p>* Step 13: Message: StatusNotificationRequest - If the transaction was stopped charging station reset at step 3 7, then — for the connector involved in the transaction: connectorStatus <i>Occupied</i> — for other connectors of this EVSE: connectorStatus <i>Available</i> or <i>Unavailable</i> - Else connectorStatus <i>Available</i> Message: NotifyEventRequest - eventData[0].trigger <i>Delta</i> - eventData[0].component.name <i>"Connector"</i> - eventData[0].variable.name <i>"AvailabilityState"</i> - If the transaction was stopped charging station reset at step 3 7, then — for the connector involved in the transaction: eventData[0].actualValue <i>Occupied</i> — for other connectors of this EVSE: eventData[0].actualValue <i>Available</i> or <i>Unavailable</i> - Else eventData[0].actualValue <i>"Available"</i></p> |
| <p>Post scenario validations: - A message to report the state of a connector has been received for all connectors.</p> |

6.2.4. Page 91 - (2026-02) - TC_B_100_CS - Use active securityProfile level

| | |
|----------------|--|
| Test case name | Set new NetworkConnectionProfile - Identity and password |
| Test case Id | TC_B_100_CS |
| ... | |

| Main (Test scenario) | |
|--|---|
| Charging Station | CSMS |
| 2. The Charging Station responds with a SetNetworkProfileResponse | <p>1. The Test System sends a SetNetworkProfileRequest with:</p> <ul style="list-style-type: none"> - configurationSlot is <i><Configured non-active configurationSlot></i> - connectionData.ocppVersion <i>OCPP21</i> - connectionData.ocppInterface <i>Any</i> - connectionData.ocppTransport <i>JSON</i> - connectionData.messageTimeout <i><Configured messageTimeout></i> - connectionData.ocppCsmsUrl <i><Configured ocppCsmsUrl></i> - connectionData.securityProfile <Active SecurityProfile> - connectionData.identity <i><Configured identity></i> - connectionData.basicAuthPassword <i><Configured basicAuthPassword></i> |
| ... | |

6.2.5. Page 103/104 - (2026-02) - TC_B_108_CS - Added SetNetworkProfileRequest main steps

| | |
|----------------|--|
| Test case name | Set new NetworkConnectionProfile - Prevent overwriting configured Network Profile slot |
| Test case Id | TC_B_108_CS |
| ... | |

| | |
|-----------------|---|
| Test case name | Set new NetworkConnectionProfile - Prevent overwriting configured Network Profile slot |
| Prerequisite(s) | NetworkConfiguration component variables are writable. The Charging Station supports having at least two NetworkProfiles installed at the same time. |

| Main (Test scenario) | |
|---|--|
| Charging Station | CSMS |
| 2. The Charging Station responds with GetVariablesResponse | 1. Test System sends GetVariablesRequest for - OCPPCommCtrlr.NetworkConfigurationPriority |
| <u>Note</u> : If step 2 attributeValue contains a list of at least two values, then skip to step 7 | |
| 4. The Charging Station responds with a SetNetworkProfileResponse | 3. The Test System sends a SetNetworkProfileRequest with: - configurationSlot is <Configured non-active configurationSlot> - connectionData.ocppVersion OCPP21 - connectionData.ocppInterface Any - connectionData.ocppTransport JSON - connectionData.messageTimeout <Configured messageTimeout> - connectionData.ocppCsmsUrl <Configured ocppCsmsUrl> - connectionData.securityProfile <Active SecurityProfile> - connectionData.basicAuthPassword <Configured basicAuthPassword> |
| 6. The Charging Station responds with SetVariablesResponse | 5. Test System sends SetVariablesRequest with - setVariableData[0].component.name OCPPCommCtrlr - setVariableData[0].variable.name NetworkConfigurationPriority - setVariableData[0].attributeValue <Active configuration slot>, <Non-active configuration slot> |
| <u>Note</u> : For each value in NetworkConfigurationPriority, try to set a NetworkConfiguration instance: | |
| FOR slot in attributeValue of OCPPCommCtrlr.NetworkConfigurationPriority DO | |
| 4. 8. Charging Station responds with SetVariablesResponse | 3. 7. Test System sends SetVariablesRequest with: - setVariableData[0].component.name NetworkConfiguration - setVariableData[0].component.instance <slot> - setVariableData[0].variable.name MessageTimeout - setVariableData[0].attributeValue 123 |
| END FOR | |

| Tool validations |
|--|
| <p>* Step 2:</p> <p>Message GetVariablesResponse with:</p> <ul style="list-style-type: none"> - getVariableResult[0].component = OCPPCommCtrlr - getVariableResult[0].variable = NetworkConfigurationPriority - getVariableResult[0].attributeValue = <a list of at least two values> - getVariableResult[0].attributeStatus = Accepted |
| <p>* Step 4:</p> <p>Message SetNetworkProfileResponse with:</p> <ul style="list-style-type: none"> - status = Accepted |
| <p>* Step 6:</p> <p>Message SetVariablesResponse with:</p> <ul style="list-style-type: none"> - setVariableResult[0].component = OCPPCommCtrlr - setVariableResult[0].variable = NetworkConfigurationPriority - setVariableResult[0].attributeStatus = Accepted |

| |
|--|
| Tool validations |
| <p>* Step 4 Step 8:</p> <p>FOR <i>slot</i> in OCPPCommCtrlr.NetworkConfigurationPriority DO</p> <p>Message SetVariablesResponse with:</p> <ul style="list-style-type: none"> - setVariableResult[0].component.name <i>NetworkConfiguration</i> - setVariableResult[0].component.instance <i><slot></i> - setVariableResult[0].variable.name <i>MessageTimeout</i> - setVariableResult[0].attributeStatus <i>Rejected</i> - setVariableResult[0].attributeStatusInfo.reasonCode = <i>PriorityNetworkConf</i> <p>END FOR</p> |
| <p>Post scenario validations:</p> <ul style="list-style-type: none"> - N/a |

6.2.6. Page 105 - 107 - (2026-02) - TC_B_109_CS - Testcase updated

Added descriptions for WebSocket disconnection and reconnection. NetworkConfiguration.Identity and NetworkConfiguration.BasicAuthPassword are now set using **SetNetworkProfileRequest**. To ensure SecurityCtrlr.BasicAuthPassword is correctly applied during reconnection, a new valid password is generated and used instead of the originally configured basicAuthPassword.

| | |
|------------------------|---|
| Test case name | Set new NetworkConnectionProfile - When changing SecurityCtrlr.Identity/BasicAuthPassword the NetworkProfiles.Identity/BasicAuthPassword must be cleared |
| Test case Id | TC_B_109_CS |
| ... | |
| Prerequisite(s) | NetworkConfiguration component variables are writable. NetworkConfiguration.Identity and NetworkConfiguration.BasicAuthPassword are set. |

| | |
|---|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| 2. The Charging Station responds with GetVariablesResponse | 1. Test System sends GetVariablesRequest for - OCPPCommCtrlr.ActiveNetworkProfile |
| <u>Note:</u> The result of Step #2 is called <the active configuration> | |
| 4. The Charging Station responds with GetVariablesResponse | 3. Test System sends GetVariablesRequest for - NetworkConfiguration[<the active configuration>].Identity - NetworkConfiguration [<the active configuration> .SecurityProfile |
| <u>Note:</u> The security profile of step 4 is used in the SetNetworkProfileRequest | |
| 6. The Charging Station responds with SetNetworkProfileResponse | 5. The Test System sends a SetNetworkProfileRequest with: <ul style="list-style-type: none"> - configurationSlot is <the active configuration> - connectionData.ocppVersion OCPP21 - connectionData.ocppInterface Any - connectionData.ocppTransport JSON - connectionData.messageTimeout <Configured messageTimeout> - connectionData.ocppCsmsUrl <Configured ocppCsmsUrl> - connectionData.securityProfile <security profile from step 4> - connectionData.identity = <Configured ChargingStationId> - connectionData.basicAuthPassword <Configured basicAuthPassword> |

| | |
|---|---|
| Main (Test scenario) | |
| 6- 8. The Charging Station responds with SetVariablesResponses | 5- 7. Test System sends SetVariablesRequests for - SecurityCtrlr.Identity = <configured ChargingStationId> - SecurityCtrlr.BasicAuthPassword = <Configured basicAuthPassword> <generated valid password> |
| 8- 10. The Charging Station responds with GetVariablesResponse | 7- 9. Test System sends GetVariablesRequest for - NetworkConfiguration [<the active configuration>].Identity |
| 10. Charging Station reconnects | 9. Test System closes the websocket connection |
| <u>Note:</u> Test System reconnects using values from SecurityCtrlr.Identity/BasicAuthPassword | |
| 11. The Test System closes the WebSocket connection. | |
| 12. The Charging Station sends a HTTP upgrade request with an Authorization header, containing a username/password combination (with the <generated valid password>). <u>Note(s) :</u> - The Authorization header is formatted as follows: AUTHORIZATION: Basic <Base64 encoded(<Configured ChargingStationId>:<generated valid password>)> | 13. The Test System validates the username/password combination AND upgrades the connection to a (secured) WebSocket connection. |
| 12- 15. The Charging Station responds with GetVariablesResponse | 11- 14. Test System sends GetVariablesRequest for - OCPPCommCtrlr.ActiveNetworkProfile |
| <u>Note:</u> Restoring the Identity and BasicAuthPassword via SetNetworkProfileRequest and reconnecting. | |
| 14. The Charging Station responds with GetVariablesResponse | 13. Test System sends GetVariablesRequest for - NetworkConfiguration [<the active configuration>] - SecurityProfile |
| 16- 17. The Charging Station responds with SetNetworkProfileResponse | 15- 16. The Test System sends a SetNetworkProfileRequest with: - configurationSlot is <the active configuration> - connectionData.ocppVersion OCPP21 - connectionData.ocppInterface Any - connectionData.ocppTransport JSON - connectionData.messageTimeout <Configured messageTimeout> - connectionData.ocppCsmsUrl <Configured ocppCsmsUrl> - connectionData.securityProfile <security profile from step 14 4> - connectionData.identity = <Configured ChargingStationId> - connectionData.basicAuthPassword <Configured basicAuthPassword> |
| 18. Charging Station reconnects | 17. Test System closes the websocket connection |
| 18. The Test System closes the WebSocket connection. | |
| 19. The Charging Station sends a HTTP upgrade request with an Authorization header, containing a username/password combination (with the <configured BasicAuthPassword>). <u>Note(s) :</u> - The Authorization header is formatted as follows: AUTHORIZATION: Basic <Base64 encoded(<Configured ChargingStationId>:<configured BasicAuthPassword>)> | 20. The Test System validates the username/password combination AND upgrades the connection to a (secured) WebSocket connection. |
| 20- 22. The Charging Station responds with GetVariablesResponse | 19- 21. Test System sends GetVariablesRequest for - OCPPCommCtrlr.ActiveNetworkProfile |

| Tool validations |
|---|
| <p>* Step 2:</p> <p>Messages GetVariableResponse with:</p> <ul style="list-style-type: none"> - getVariableResult[0].component = <i>OCPPCommCtrlr</i> - getVariableResult[0].variable = <i>ActiveNetworkProfile</i> - getVariableResult[0].attributeValue = <i><any configuration slot></i> - getVariableResult[0].attributeStatus = <i>Accepted</i> |
| <p>* Step 4:</p> <p>Messages GetVariableResponse with:</p> <ul style="list-style-type: none"> - getVariableResult[0].component = <i>NetworkConfiguration</i> - getVariableResult[0].instance = <i><the active configuration></i> - getVariableResult[0].variable = <i>Identity</i> - getVariableResult[0].attributeValue = <i><identity of charging station></i> - getVariableResult[0].variable = <i>SecurityProfile</i> - getVariableResult[0].attributeValue not <i><omitted></i> - getVariableResult[0].attributeStatus = <i>Accepted</i> |
| <p>* Step 6:</p> <p>Messages SetNetworkConfigurationResponse with:</p> <ul style="list-style-type: none"> - status = <i>Accepted</i> |
| <p>* Step 6 8:</p> <p>Messages SetVariableResponse with:</p> <ul style="list-style-type: none"> - setVariableResult[0].component.name = <i>SecurityCtrlr</i> - setVariableResult[0].variable.name = <i>Identity</i> - setVariableResult[0].attributeStatus = <i>Accepted</i> - setVariableResult[1].component.name = <i>SecurityCtrlr</i> - setVariableResult[1].variable.name = <i>BasicAuthPassword</i> - setVariableResult[1].attributeStatus = <i>Accepted</i> |
| <p>* Step 8 10:</p> <p>Messages GetVariableResponse with:</p> <ul style="list-style-type: none"> - getVariableResult[0].component = <i>NetworkConfiguration</i> - getVariableResult[0].variable = <i>Identity</i> - getVariableResult[0].attributeValue = <i><empty></i> - getVariableResult[0].attributeStatus = <i>Accepted</i> |
| <p>* Step 12 15:</p> <p>Messages GetVariableResponse with:</p> <ul style="list-style-type: none"> - getVariableResult[0].component = <i>OCPPCommCtrlr</i> - getVariableResult[0].variable = <i>ActiveNetworkProfile</i> - getVariableResult[0].attributeValue = <i><the active configuration></i> - getVariableResult[0].attributeStatus = <i>Accepted</i> |
| <p>* Step 14:</p> <p>Messages GetVariableResponse with:</p> <ul style="list-style-type: none"> - getVariableResult[0].component = <i>NetworkConfiguration</i> - getVariableResult[0].variable = <i>SecurityProfile</i> - getVariableResult[0].attributeValue not <i><omitted></i> - getVariableResult[0].attributeStatus = <i>Accepted</i> |
| <p>* Step 16 17:</p> <p>Messages SetNetworkConfigurationResponse with:</p> <ul style="list-style-type: none"> - status = <i>Accepted</i> |
| <p>* Step 20 22:</p> <p>Messages GetVariableResponse with:</p> <ul style="list-style-type: none"> - getVariableResult[0].component = <i>OCPPCommCtrlr</i> - getVariableResult[0].variable = <i>ActiveNetworkProfile</i> - getVariableResult[0].attributeValue = <i><the active configuration></i> - getVariableResult[0].attributeStatus = <i>Accepted</i> |

| |
|-------------------------------------|
| Tool validations |
| Post scenario validations: - N/a |

6.2.7. Page 130 - (2026-02) - TC_C_17_CS - Corrected wrong triggerReason [1113]

Wrong mention of triggerReason in step 5 has been changed to chargingState. Tool validation steps clarified.

| | |
|--|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| 1. The Test System closes the WebSocket connection AND does not accept a reconnect. | |
| <u>Manual Action</u> : Present valid idToken which is already configured in the Authorization Cache | |
| <u>Note(s)</u> : The Test System will wait for 5 seconds | |
| 2. The Test System accepts reconnection attempt from the Charging Station. | |
| <u>Note(s)</u> : The Charging Station will empty its Transaction message queue. This will contain one or more TransactionEventRequest messages | |
| 3. The Charging Station sends a TransactionEventRequest | 4. The Test System responds with a TransactionEventResponse with idTokenInfo.status Invalid (if idToken is not omitted) |
| 3. The Charging Stations empties its Transaction message queue: TransactionEventRequest | 4. The Test System responds with a TransactionEventResponse |
| <u>Note(s)</u> : - This will contain one or more TransactionEventRequest messages | <u>Note(s)</u> : - The Test System will respond to the TransactionEventRequest containing the idToken, with idtokenInfo.status Invalid |
| 5. The Charging Station sends a TransactionEventRequest with triggerReason SuspendedEVSE transactionInfo.chargingState SuspendedEVSE | 6. The Test System responds with a TransactionEventResponse |
| <u>Note(s)</u> : Steps 5 & 6 can occur before or during the sending of messages from the offline queue (steps 3 & 4). | |

| |
|---|
| Tool validations |
| <p>* Step 5: Step 3:</p> <p>Message TransactionEventRequest</p> <p>A message with:</p> <p>All Message(s): TransactionEventRequest</p> <p>- offline must be true</p> <p>One of the Message(s): TransactionEventRequest</p> <p>- triggerReason Authorized</p> <p>- idToken.idToken <Configured valid_idtoken_idtoken></p> <p>- idToken.type <Configured valid_idtoken_type></p> <p>- offline True true</p> <p>* Step 5:</p> <p>A message with:</p> <p>- offline false or omitted</p> <p>- transactionInfo.chargingState SuspendedEVSE</p> <p>- triggerReason ChargingStateChanged</p> |

6.2.8. Page 147 - (2026-02) - TC_C_38_CS - Removed memory state IdTokenCached [1164]

There is no need to call memory state IdTokenCached if the Authorization Cache has been disabled. Thas has therefore been removed.

| | |
|----------------|--|
| Test case name | Clear Authorization Data in Authorization Cache - Rejected |
| Test case Id | TC_C_38_CS |
| ... | |

| |
|---|
| Before (Preparations) |
| Configuration State: AuthCacheEnabled is <i>false</i> (If implemented) |
| Memory State: <i>IdTokenCached</i> for <Configured valid IdToken fields> |
| Reusable State(s): N/a |

[...]

NOTE: If the Charging Station supports ISO15118, this testcase needs to be executed using EIM.

6.2.9. Page 173/174 - (2026-02) - TC_C_26_CS - Clarification of main test and tool validation steps.

| | |
|---|---|
| Main (Test scenario) | |
| Charging Station | CSMS |
| 1. The Charging Station notifies the CSMS about the current state of all connectors. | 2. The Test System responds accordingly. |
| 3. The Charging Station sends a TransactionEventRequest . The Charging Station empties its Transaction message queue: TransactionEventRequest <u>Note(s):</u> - The Charging Station will empty its Transaction message queue. This will contain one or more TransactionEventRequest messages | 4. The Test System responds with a TransactionEventResponse <u>Note(s):</u> - The Test System will respond to the TransactionEventRequest containing the idToken, with idtokenInfo.status Invalid |
| 5. The Charging Station sends a TransactionEventRequest <u>Note(s):</u> - This will contain chargingState SuspendedEVSE | 6. The Test System responds with a TransactionEventResponse |
| <u>Note(s):</u> Steps 5 & 6 can occur before or during the sending of messages from the offline queue (steps 3 & 4). | |
| 5. 7. Execute Reusable State <i>StopAuthorized</i> | |
| 6. 8. Execute Reusable State <i>EVConnectedPostSession</i> | |
| 7. 9. Execute Reusable State <i>EVDisconnected</i> | |

| |
|--|
| Tool validations * Step 1: Message: StatusNotificationRequest - connectorStatus must be <i>Occupied</i> Message: NotifyEventRequest - eventData[0].trigger must be <i>Delta</i> - eventData[0].actualValue must be <i>Occupied</i> - eventData[0].component.name must be <i>Connector</i> - eventData[0].variable.name must be <i>AvailabilityState</i> * Step 3: All Message(s): TransactionEventRequest - offline must be <i>true</i> One of the Message(s): TransactionEventRequest - chargingState must be <i>Charging</i> * Step 4: One of the Message(s): TransactionEventRequest - chargingState must be <i>SuspendedEVSE</i> * Step 5: TransactionEventRequest - chargingState must be <i>SuspendedEVSE</i> Post scenario validations: N/a |
|--|

6.2.10. Page 184 - (2026-02) - TC_C_100_CS - Test case removed

This testcases has been removed, because it duplicates TC_E_05_CS.

6.2.11. Page 209 - (2026-02) - TC_C_121_CS - Added tool validations for triggerReason LimitSet

| | |
|----------------|--|
| Test case name | Incremental authorization - increasing enabled |
| Test case Id | TC_C_121_CS |
| ... | |

| Tool validations |
|---|
| <p>* Step 2:</p> <p>Message SetDefaultTariffResponse</p> <ul style="list-style-type: none"> - status must be <i>Accepted</i> |
| <p>* Step 3 and 4 and 5 combined: (First transactionEventRequest with idToken)</p> <p>Message TransactionEventRequest with:</p> <ul style="list-style-type: none"> - idToken must be <i><Not empty></i> - idToken.type must be <i>DirectPayment</i> - transactionInfo.transactionId must be <i><transactionId></i> - transactionInfo.transactionLimit.maxCost must be <i>10.00</i> |
| <p>* Step 6:</p> <p>Message TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - triggerReason must be <i>LimitSet</i> - transactionInfo.transactionId must be <i><transactionId></i> - transactionInfo.transactionLimit.maxCost must be <i>15.00</i> |
| <p>* Step 8:</p> <p>Message TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - triggerReason must be <i>LimitSet</i> - transactionInfo.transactionId must be <i><transactionId></i> - transactionInfo.transactionLimit.maxCost must be <i>20.00</i> |
| <p>* Step 10:</p> <p>Message TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - triggerReason must be <i>LimitSet</i> - transactionInfo.transactionId must be <i><transactionId></i> - transactionInfo.transactionLimit.maxCost must be <i>25.00</i> |
| <p>Post scenario validations:</p> <p>N/a</p> |

6.2.12. Page 214 - (2026-02) - TC_C_124_CS and TC_C_128_CS to TC_C_130_CS - Corrected requirement reference and removed note

Corrected the requirement reference to E16.FR.03 and removed C24.FR.03 from TC_C_124_CS. The second note was incorrect and has been removed, as the first note sufficiently covers the test case.

6.2.13. Page 294/295/296 - (2026-02) - TC_E_102_CS - Test case and tool validations corrected.

Step 11 was corrected to align with E16.FR.04. Tool validations for **transactionInfo.transactionLimit.maxTime** removed as they are not applicable.

| | |
|----------------|--|
| Test case name | Transactions with fixed cost, energy or time - CSMS and CS both specify limits |
| Test case Id | TC_E_102_CS |
| ... | |

| Main (Test scenario) | |
|---|---|
| Charging Station | CSMS |
| 1. The Charging Station sends a TransactionEventRequest | 2. The Test System responds with a TransactionEventResponse with transactionLimit.maxEnergy 20000 |
| 1. Execute Reusable State EnergyTransferStarted with: (At the first TransactionEventResponse) - transactionLimit.maxEnergy 20000 | |
| 3. 2. The Charging Station sends a TransactionEventRequest | 4. 3. The Test System responds with a TransactionEventResponse |
| 5. 4. The Charging Station sends a TransactionEventRequest | 6. 5. The Test System responds with a TransactionEventResponse |
| <u>Note:</u> Steps 5 4 and 6 5 may repeat | |
| <u>Manual Action:</u> Enter energy limit 10 kWh for transaction | |
| 7. 6. The Charging Station sends a TransactionEventRequest | 8. 7. The Test System responds with a TransactionEventResponse |
| 9. 8. The Charging Station sends a TransactionEventRequest | 10. 9. The Test System responds with a TransactionEventResponse |
| <u>Note:</u> Steps 9 8 and 10 9 may repeat | |
| <u>Manual Action:</u> Enter energy limit 40 kWh for transaction | |
| <u>Note:</u> CS should not allow this or at least not send a higher limit than 20000 as set by CSMS | |
| 11. The Charging Station sends a TransactionEventRequest | 12. The Test System responds with a TransactionEventResponse |
| 10. The Charging Station SHALL NOT send a TransactionEventRequest with triggerReason is LimitSet | |
| 13. 11. The Charging Station sends a TransactionEventRequest | 14. 12. The Test System responds with a TransactionEventResponse with transactionLimit.maxEnergy 2000 |
| 15. 13. The Charging Station sends a TransactionEventRequest | 16. 14. The Test System responds with a TransactionEventResponse |
| 17. 15. The Charging Station sends a TransactionEventRequest | 18. 16. The Test System responds with a TransactionEventResponse |
| <u>Note:</u> Steps 17 15 and 18 16 may repeat | |
| 19. 17. The Charging Station sends a TransactionEventRequest | 20. 18. The Test System responds with a TransactionEventResponse |
| <u>Note:</u> Step 19 17 should be triggered when 2kWh has been charged | |

Tool validations

* Step 1:

Message: **TransactionEventRequest**

- ~~transactionInfo.transactionLimit~~ must be <omitted>

* Step 3 2:

Message: **TransactionEventRequest**

- **eventType** must be *Updated*

- **triggerReason** must be *LimitSet*

- **transactionInfo.transactionLimit.maxEnergy** must be 20000

- **transactionInfo.transactionLimit.maxTime** must be 3600 <omitted>

- **transactionInfo.transactionLimit.maxCost** must be <omitted>

* Step 5 4:

Message: **TransactionEventRequest**

- **eventType** must be *Updated*

- **transactionInfo.transactionLimit** must be <omitted>

* Step 7 6:

Message: **TransactionEventRequest**

- **eventType** must be *Updated*

- **triggerReason** must be *LimitSet*

- **transactionInfo.transactionLimit.maxEnergy** must be 10000

- **transactionInfo.transactionLimit.maxTime** must be 3600 <omitted>

- **transactionInfo.transactionLimit.maxCost** must be <omitted>

| |
|--|
| Tool validations |
| <p>* Step 8:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - transactionInfo.transactionLimit must be <i><omitted></i> <p>* Step 10:</p> <p>No TransactionEventRequest with triggerReason <i>LimitSet</i> is received</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - triggerReason must NOT be <i>LimitSet</i> <p>IF triggerReason is <i>LimitSet</i></p> <p>THEN</p> <ul style="list-style-type: none"> - transactionInfo.transactionLimit.maxEnergy must be <i>20000</i> - transactionInfo.transactionLimit.maxTime must be <i>3600</i> - transactionInfo.transactionLimit.maxCost must be <i><omitted></i> <p>ENDIF</p> <p>* Step 11:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - transactionInfo.transactionLimit must be <i><omitted></i> <p>* Step 13:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - triggerReason must be <i>LimitSet</i> - transactionInfo.transactionLimit.maxEnergy must be <i>2000</i> - transactionInfo.transactionLimit.maxTime must be <i>3600</i> <i><omitted></i> - transactionInfo.transactionLimit.maxCost must be <i><omitted></i> <p>* Step 15:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - transactionInfo.transactionLimit must be <i><omitted></i> <p>* Step 17:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> (or <i>Ended</i> if TxStopPoint contains "EnergyTransfer") - triggerReason must be <i>EnergyLimitReached</i> - transactionInfo.transactionLimit must be <i><omitted></i> - transactionInfo.chargingState must be <i>SuspendedEVSE</i> (or <i>EVConnected</i> if TxStopPoint contains "EnergyTransfer") |
| <p>Post scenario validations:</p> <p>N/a</p> |

6.2.14. Page 297/298 - (2026-02) - TC_I_119_CS - Added tool validations for totalCost.total

| | |
|----------------|---|
| Test case name | Local Cost Calculation - Cost Details of Transaction - with tariff conditions |
| Test case Id | TC_I_119_CS |
| ... | |

| | |
|----------------------|------|
| Main (Test scenario) | |
| Charging Station | CSMS |

| Main (Test scenario) | |
|---|---|
| 2. The Charging Station responds with SetDefaultTariffResponse | <p>1. The Test System sends a SetDefaultTariffRequest with evseld 0 tariff.tariffId <i>Test System1</i> tariff.currency <i>EUR</i> tariff.reservationFixed.prices[0].priceFixed <i>20.00</i> tariff.reservationFixed.taxRates[0].type <i>t5_0</i> tariff.reservationFixed.taxRates[0].tax <i>5.0</i></p> <p>tariff.fixedFee.prices[0].priceFixed <i>10.00</i> tariff.fixedFee.prices[2 1].priceFixed <i>5.00</i> tariff.fixedFee.taxRates[0].type <i>t5_0</i> tariff.fixedFee.taxRates[0].tax <i>5.0</i></p> <p>tariff.chargingTime.prices[0].priceMinute <i>6.00</i> tariff.chargingTime.prices[0].conditions.minTime <i>30</i> tariff.chargingTime.prices[1].priceMinute <i>60.00</i> tariff.chargingTime.taxRates[0].type <i>t20_0</i> tariff.chargingTime.taxRates[0].tax <i>20.0</i></p> |

| Tool validations |
|--|
| ... |
| <p>Post scenario validations: <u>Note:</u> The value of TransactionEventRequest.timestamp of step 6 where TransactionEventRequest.eventType is Started is called <TxStartDateTime>.</p> <p>* A message TransactionEventRequest must have been received with:</p> <p>...</p> <p>- costDetails.totalCost.total.exclTax must be <sum of all exclTax subtotals after rounding> - costDetails.totalCost.total.inclTax must be <sum of all inclTax subtotals after rounding></p> <p>..</p> |

6.2.15. Page 297/298 - (2026-02) - TC_E_103_CS - Test case and tool validation corrections

Updated reusable state usage to include `transactionLimit.maxCost` set through CSMS and removed `transactionLimit.maxCost` from step 5. Incorrect references to elapsed time in the note after step 9 and to `EnergyLimitsReached` in step 8 tool validations have been corrected.

| | |
|-----------------------|---|
| Test case name | Transactions with fixed cost, energy or time - CS calculates costs and CSMS specifies limit |
| Test case Id | TC_E_103_CS |
| ... | |

| Main (Test scenario) | |
|----------------------|------|
| Charging Station | CSMS |

| Main (Test scenario) | |
|--|---|
| 2. The Charging Station responds with a SetDefaultTariffResponse | 1. The Test System sends a SetDefaultTariffRequest with evseld 0 tariff.tariffId <i>Tariff1</i> tariff.currency <i>EUR</i> tariff.chargingTime.taxRate[0].type <i>MyTax1</i> tariff.chargingTime.taxRate[0].tax 0 tariff.chargingTime.prices[0].priceMinute 60 tariff.idleTime.taxRate[0].type <i>MyTax2</i> tariff.idleTime.taxRate[0].tax 0 tariff.idleTime.prices[0].priceMinute 60 |
| 3. Execute Reusable State <i>EnergyTransferStarted</i> with: (At the first <i>TransactionEventResponse</i>) - transactionLimit.maxCost 120.00 Manual Action: Enter cost limit 120.00 for transaction | |
| 4. The Charging Station sends a TransactionEventRequest | 5. The Test System responds with a TransactionEventResponse with transactionLimit.maxCost 120.00 |
| 6. The Charging Station sends a TransactionEventRequest | 7. The Test System responds with a TransactionEventResponse |
| <i>Note: Steps 6 and 7 may repeat</i> | |
| 8. The Charging Station sends a TransactionEventRequest | 9. The Test System responds with a TransactionEventResponse |
| <i>Note: Step 10 should trigger automatically after 120 seconds have been elapsed since start of transaction</i> <i>Note: Step 8 should trigger automatically after 120.00 euro is charged.</i> | |

| Tool validations |
|---|
| * Step 2: Message SetDefaultTariffResponse - status must be <i>Accepted</i> ... * Step 8: Message: TransactionEventRequest - eventType must be <i>Updated</i> (or <i>Ended</i> if TxStopPoint contains "EnergyTransfer") - triggerReason must be <i>EnergyLimitReached</i> CostLimitReached |

6.2.16. Page 301/302 - (2026-02) - TC_E_105_CS - Test case and tool validation corrections

Reusable state *EnergyTransferStarted* used and **maxTime** reduced to 180. Step 10 **triggerReason** tool validation corrected.

| | |
|----------------|--|
| Test case name | Transactions with fixed cost, energy or time - CSMS specifies time limit |
| Test case Id | TC_E_105_CS |
| ... | |

| Main (Test scenario) | |
|--|---|
| Charging Station | CSMS |
| 1. The Charging Station sends a TransactionEventRequest | 2. The Test System responds with a TransactionEventResponse with transactionLimit.maxTime 3600 |

| | |
|--|--|
| Main (Test scenario) | |
| 1. Execute Reusable State <i>EnergyTransferStarted</i> with: <i>(At the first TransactionEventResponse)</i> transactionLimit.maxTime 3600 | |
| 3. 2. The Charging Station sends a TransactionEventRequest | 4. 3. The Test System responds with a TransactionEventResponse with |
| 5. 4. The Charging Station sends a TransactionEventRequest | 6. 5. The Test System responds with a TransactionEventResponse with transactionLimit.maxTime 300 180 |
| 7. 6. The Charging Station sends a TransactionEventRequest | 8. 7. The Test System responds with a TransactionEventResponse |
| 9. 8. The Charging Station sends a TransactionEventRequest | 10. 9. The Test System responds with a TransactionEventResponse |
| <i>Note: Steps 9 8 and 10 9 may repeat</i> | |
| 11. 10. The Charging Station sends a TransactionEventRequest | 12. 11. The Test System responds with a TransactionEventResponse |
| <i>Note: Step 11 10 should be triggered when 300 180 seconds have elapsed since start of transaction</i> | |

| |
|--|
| Tool validations |
| <p>* Step 1: Message: TransactionEventRequest - transactionInfo.transactionLimit must be <omitted></p> <p>* Step 3: Step 2: Message: TransactionEventRequest - eventType must be <i>Updated</i> - triggerReason must be <i>LimitSet</i> - transactionInfo.transactionLimit.maxEnergy must be <omitted> - transactionInfo.transactionLimit.maxTime must be 3600 - transactionInfo.transactionLimit.maxCost must be <omitted></p> <p>* Step 5: Step 4: Message: TransactionEventRequest - eventType must be <i>Updated</i> - transactionInfo.transactionLimit must be <omitted></p> <p>* Step 7: Step 6: Message: TransactionEventRequest - eventType must be <i>Updated</i> - triggerReason must be <i>LimitSet</i> - transactionInfo.transactionLimit.maxEnergy must be <omitted> - transactionInfo.transactionLimit.maxTime must be 300 180 - transactionInfo.transactionLimit.maxCost must be <omitted></p> <p>* Step 9: Step 8: Message: TransactionEventRequest - eventType must be <i>Updated</i> - transactionInfo.transactionLimit must be <omitted></p> <p>* Step 11: Step 10: Message: TransactionEventRequest - eventType must be <i>Updated</i> (or <i>Ended</i> if TxStopPoint contains "EnergyTransfer") - triggerReason must be EnergyLimitReached TimeLimitReached - transactionInfo.transactionLimit must be <omitted> - transactionInfo.chargingState must be <i>SuspendedEVSE</i> (or <i>EVConnected</i> if TxStopPoint contains "EnergyTransfer")</p> |

6.2.17. Page 303/304 - (2026-02) - TC_E_106_CS - Test case and tool validation corrections

Clarification of note and tool validations.

| | |
|----------------|--|
| Test case name | Transactions with fixed cost, energy or time - CS specifies energy limit |
| Test case Id | TC_E_106_CS |
| ... | |

| | |
|---|------|
| Main (Test scenario) | |
| Charging Station | CSMS |
| ... | |
| <u>Note:</u> Steps 3 and 4 may repeat while entering new limit | |

| |
|---|
| Tool validations |
| <p>* Step 1:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none">- eventType must be <i>Updated</i>- triggerReason must be <i>LimitSet</i> or <i>MeterValuePeriodic</i>- transactionInfo.transactionLimit.maxEnergy must be 20000- transactionInfo.transactionLimit.maxTime must be <omitted>- transactionInfo.transactionLimit.maxCost must be <omitted> <p>* Step 3:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none">- eventType must be <i>Updated</i>- triggerReason must be <i>MeterValuePeriodic</i>- transactionInfo.transactionLimit must be <omitted> <p>* Step 5:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none">- eventType must be <i>Updated</i>- triggerReason must be <i>LimitSet</i> or <i>MeterValuePeriodic</i>- transactionInfo.transactionLimit.maxEnergy must be 2000- transactionInfo.transactionLimit.maxTime must be <omitted>- transactionInfo.transactionLimit.maxCost must be <omitted> <p>* Step 7:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none">- eventType must be <i>Updated</i>- triggerReason must be <i>MeterValuePeriodic</i>- transactionInfo.transactionLimit must be <omitted> <p>...</p> |

6.2.18. Page 305/306 - (2026-02) - TC_E_107_CS - Tool validation clarifications.

Clarification of tool validations.

| | |
|----------------|--|
| Test case name | Transactions with fixed cost, energy or time - CS specifies time limit |
| Test case Id | TC_E_107_CS |
| ... | |

| Tool validations |
|--|
| <p>* Step 1:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - triggerReason must be <i>LimitSet</i> - transactionInfo.transactionLimit.maxEnergy must be <i><omitted></i> - transactionInfo.transactionLimit.maxTime must be <i>3600</i> - transactionInfo.transactionLimit.maxCost must be <i><omitted></i> <p>* Step 3:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - triggerReason must be <i>MeterValuePeriodic</i> - transactionInfo.transactionLimit must be <i><omitted></i> <p>* Step 5:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - triggerReason must be <i>LimitSet</i> - transactionInfo.transactionLimit.maxEnergy must be <i><omitted></i> - transactionInfo.transactionLimit.maxTime must be <i>20</i> - transactionInfo.transactionLimit.maxCost must be <i><omitted></i> <p>* Step 7:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - triggerReason must be <i>MeterValuePeriodic</i> - transactionInfo.transactionLimit must be <i><omitted></i> <p>...</p> |

6.2.19. Page 313/314 - (2026-02) - TC_E_114_CS/TC_E_115_CS - Added main step to check the transaction is not resumed

Added main step to check the transaction is not resumed, but Ended.

| Test case Id | TC_E_114_CS / TC_E_115_CS |
|--|--|
| ... | |
| Main (Test scenario) | |
| Charging Station | CSMS |
| <u>Manual Action:</u> Cut the power to the Charging Station, wait 30 seconds and restore power to the Charging Station | |
| 1. The Charging Station sends a TransactionEventRequest | 2. The Test System responds with a TransactionEventResponse |

| Tool validations |
|---|
| <p>* Step 1:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Ended</i> - triggerReason must NOT be <i>TxResumed</i> - stoppedReason must be <i>PowerLoss</i> or <i>Reboot</i> |
| <p>Post scenario validations (TC_E_114_CS):</p> <p>Charging Station boots normally, but no Transaction related messages are sent to the CSMS with <i>triggerReason</i> = <i>TxResumed</i>, since resuming is not supported.</p> <p>Note: It is allowed that some TransactionEventRequests are sent to report that the running transactions have been ended, e.g. via triggerReason = AbnormalCondition.</p> |
| <p>Post scenario validations (TC_E_115_CS):</p> <p>Charging Station boots normally, but no Transaction related messages are sent to the CSMS with <i>triggerReason</i> = <i>TxResumed</i>, since resuming is disabled.</p> |

6.2.20. Page 610 - (2026-02) - TC_L_07_CS - Path to non-existent firmware updated

| | |
|----------------|---|
| Test case name | Secure Firmware Update - DownloadFailed |
| Test case Id | TC_L_07_CS |
| ... | |

| Main (Test scenario) | |
|---|--|
| Charging Station | CSMS |
| 2. The Charging Station responds with a UpdateFirmwareResponse | <p>1. The Test System sends a UpdateFirmwareRequest with firmware.installDateTime <Current DateTime - 2 hours> firmware.location "does_not_exist_download" + <Configured firmware location> + "_does_not_exist" firmware.retrieveDateTime <Current DateTime - 2 hours> firmware.signingCertificate <Configured signingCertificate> firmware.signature <Configured signature></p> <p>Note(s) : - The firmware location is mutated such that "does_not_exist_download" is pre-appended to the file path.</p> |
| ... | |

6.2.21. Page 421 - (2026-02) - TC_I_107_CS - Used reusable state Authorized

| | |
|----------------|---|
| Test case name | Receive Driver Tariff - CS cannot process tariff - UseDefault/CentralCost |
| Test case Id | TC_I_107_CS |
| ... | |

| Main (Test scenario) | |
|---|--|
| Charging Station | CSMS |
| 2. The Charging Station responds with SetDefaultTariffResponse | <p>1. The Test System sends a SetDefaultTariffRequest with evseld 0 tariff.tariffId Test System1A tariff.currency EUR tariff.energy.prices[0].priceKwh 1.00</p> |
| Note: Test system returns a <i>TariffType</i> in the <i>AuthorizeResponse</i> that is too large to handle, i.e. more than <i>MaxElements</i> number of <i>fixedFee</i> prices. | |
| <p>3. Execute Reusable State <i>Authorized</i> with AuthorizeResponse with a tariff element that contains more than TariffCostCtrlr.MaxElements[Tariff] <i>TariffFixedType</i> elements: idTokenInfo.status <i>Accepted</i> tariff.tariffId <i>Test System1</i> tariff.currency <i>EUR</i> tariff.fixedFee.prices[0].priceFixed <i>0.00</i> tariff.fixedFee.prices[0].conditions.startTimeOfDay <i>00:00</i> tariff.fixedFee.prices[1].priceFixed <i>0.01</i> tariff.fixedFee.prices[1].conditions.startTimeOfDay <i>00:01</i> ... tariff.fixedFee.prices[<max elements + 1>].priceFixed <i><increasing amount></i> tariff.fixedFee.prices[<max elements + 1>].conditions.startTimeOfDay <i><increasing time></i></p> | |
| <p>Option A : If AuthCtrlr.AuthorizeRemoteStart = false (when variable is readOnly): Manual Action: Present idToken.</p> | |

| Main (Test scenario) | |
|---|---|
| Option B: If AuthCtrlr.AuthorizeRemoteStart = true: 4. The Charging Station sends an RequestStartTransactionResponse | 3. The Test System sends an RequestStartTransactionRequest with idToken = <configured valid_idtoken_idtoken> |
| Note: It is allowed that Charging Station sends a CALLRESULTERROR if it cannot process the tariff in the response. | |
| Note 2: A transaction may have been started already when TxStartPoint contains ParkingBayOccupancy or EVConnected. Energy shall be delivered, because idToken is Accepted and Charging Station continues with default tariff or CSMS does central cost calculation | |
| 4. Execute Reusable State EnergyTransferStarted | |
| 5. The Charging Station sends a NotifyEventRequest | 6. The Test System sends a NotifyEventResponse |

| Tool validations |
|---|
| * Step 2: Message SetDefaultTariffResponse - status Accepted * Step 5: Message NotifyEventRequest - trigger = Alerting or Delta - component = TariffCostCtrlr - variable = Problem - actualValue = true Note: It is allowed to also receive other NotifyEventRequests from the Charging Station. |
| Post scenario validations: - Charging Station SHALL deliver energy. |

6.2.22. Page 424/425 - (2026-02) - TC_I_109_CS - Added reusable state EnergyTransferStarted

| Main (Test scenario) | |
|---|--|
| Charging Station | CSMS |
| ... | |
| 2. The Charging Station sends a TransactionEventRequest | 3. The Test System responds with a TransactionEventResponse |
| 2. Execute Reusable State EnergyTransferStarted | |
| 5. 4. The Charging Station responds with GetTariffsResponse | 4. 3. The Test System sends a GetTariffsRequest with evseld <Configured evseld> |
| 6. 5. Execute Reusable State StopAuthorized | |
| 8. 7. The Charging Station responds with GetTariffsResponse | 7. 6. The Test System sends a GetTariffsRequest with evseld <Configured evseld> |
| 9. 8. Execute Reusable State Authorized | |
| 10. 9. The Charging Station sends a TransactionEventRequest Note(s): - This step needs to be executed after the <Configured ev_connection_timeout> expires, if the transaction has been started. So in the case TxStartPoint contains ParkingBayOccupancy OR Authorized | 11. 10. The Test System responds with a TransactionEventResponse |

| | |
|--|---|
| Main (Test scenario) | |
| 13 12 . The Charging Station responds with GetTariffsResponse | 12 11 . The Charging Station responds with GetTariffsResponse The Test System sends a GetTariffsRequest with evseld <Configured evseld> |

| |
|--|
| Tool validations |
| <p>* Step 2: Message TransactionEventRequest - transactionInfo.tariffId must be <i>Test System1</i></p> <p>* Step 5 4: Message GetTariffsResponse - status must be <i>Accepted</i> - tariffAssignments[0].tariffId must be <i>Test System1</i> - tariffAssignments[0].tariffKind must be <i>DriverTariff</i> - tariffAssignments[0].idTokens[0] must be <Configured valid_idtoken_idtoken></p> <p>* Step 8 7: Message GetTariffsResponse - status must be <i>NoTariff</i></p> <p>* Step 10 9: Message: TransactionEventRequest - triggerReason must be <i>EVConnectTimeout</i> - transactionInfo.stoppedReason must be <i>Timeout</i></p> <p>* Step 13 12: Message GetTariffsResponse - status must be <i>NoTariff</i></p> |

6.2.23. Page 436 - (2026-02) - TC_I_115_CSMS - Added main steps TransactionEvent TariffChanged

| | |
|-----------------------|--|
| Test case name | Local Cost Calculation - Change transaction tariff - TariffConditionsSupported is true |
| Test case Id | TC_I_115_CSMS |
| ... | |

| | |
|---|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| ... | |
| 4. The Test System sends a TransactionEventRequest with eventType <i>Updated</i> triggerReason <i>TariffChanged</i> transactionInfo.tariffId <tariff.tariffId from step 2> | 5. The CSMS responds with a TransactionEventResponse |

6.2.24. Page 455 - (2026-02) - TC_I_121_CS - Incorrect minCost / maxCost validations

| | |
|--------------------------|--|
| Test case name | Local Cost Calculation - Cost Details of Transaction - minCost/maxCost |
| Test case Id | TC_I_121_CS |
| Use case Id(s) | I12 |
| Requirement(s) | I12.FR.17, I12.FR.38, I12.FR.39, I12.FR.39, I12.FR.40 |
| System under test | Charging Station |
| Description | Charging Station calculates cost of the transaction locally and returns a break-down of the cost at end of the transaction for every charging period for which a different tariff element was active. CSMS can use this to generate invoices or Charge Detail Records for EMSPs. |
| Purpose | To verify if the Charging Station correctly reports the cost and usage details of a transaction. |

| | |
|-----------------|---|
| Test case name | Local Cost Calculation - Cost Details of Transaction - minCost/maxCost |
| Prerequisite(s) | <ul style="list-style-type: none"> - The Charging Station supports local cost calculation using the Tariff mechanism (TariffCostCtrlr.Enabled[Tariff] exists and <i>ReadWrite</i> or is <i>true</i> and <i>ReadOnly</i>). - The Charging Station supports tariff conditions (TariffCostCtrlr.ConditionsSupported[Tariff] is <i>true</i>) - This test cases expects that reusable state <i>StopAuthorized</i> does not introduce an additional delay. |

| | |
|--|--|
| Before (Preparations) | |
| Configuration State: <ul style="list-style-type: none"> - TariffCostCtrlr.Enabled[Tariff] is <i>true</i> - TariffCostCtrlr.Enabled[RunningCost] is <i>true</i> - TariffCostCtrlr.Enabled[Cost] is <i>true</i> - TariffCostCtrlr.Interval[Cost] is 15 - SampledDataCtrlr.TxUpdatedInterval is 0 - AlignedDataCtrlr.Interval is 0 | |
| Memory State: N/a | |
| Reusable State(s): N/a | |

| | |
|--|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| 2. The Charging Station responds with SetDefaultTariffResponse | 1. The Test System sends a SetDefaultTariffRequest with evseld 0 tariff.tariffId <i>Test System1</i> tariff.currency <i>EUR</i> tariff.minCost.exclTax <i>16.00</i> tariff.minCost.inclTax <i>19.20</i> tariff.minCost.taxRates[0].type <i>t10_0</i> tariff.minCost.taxRates[0].tax <i>10.0</i> tariff.maxCost.exclTax <i>35.00</i> tariff.maxCost.inclTax <i>42.00</i> tariff.minCost.taxRates[0].type <i>t10_0</i> tariff.minCost.taxRates[0].tax <i>10.0</i> tariff.chargingTime.prices[0].priceMinute <i>60.00</i> tariff.chargingTime.taxRates[0].type <i>t20_0</i> tariff.chargingTime.taxRates[0].tax <i>20.0</i> |
| 3. Execute Reusable State <i>Authorized</i> | |
| 4. Execute Reusable State <i>EnergyTransferStarted</i> | |
| Note: The Test System waits 5 seconds, calculated cost < minCost | |
| 5. Execute Reusable State <i>StopAuthorized</i> Execute Reusable State <i>EVDIsconnected</i> Execute Reusable State <i>ParkingBayUnoccupied</i> | |
| 6. The Charging Station sends a TransactionEventRequest | 7. The Test System responds with a TransactionEventResponse |
| 8. Execute Reusable State <i>Authorized</i> | |
| 9. Execute Reusable State <i>EnergyTransferStarted</i> | |
| Note: The Test System waits 20 seconds, calculated cost between minCost and maxCost | |
| 10. Execute Reusable State <i>StopAuthorized</i> Execute Reusable State <i>EVDIsconnected</i> Execute Reusable State <i>ParkingBayUnoccupied</i> | |

| Main (Test scenario) | |
|--|---|
| 9. 11. The Charging Station sends a TransactionEventRequest | 10. 12. The Test System responds with a TransactionEventResponse |
| 13. Execute Reusable State <i>Authorized</i> | |
| 11. 14. Execute Reusable State <i>EnergyTransferStarted</i> | |
| Note: <i>Reporting costDetails every 15 s, eventually cost > maxCost</i> | |
| 12. 15. The Charging Station sends a TransactionEventRequest | 13. 16. The Test System responds with a TransactionEventResponse |
| 14. 17. The Charging Station sends a TransactionEventRequest | 15. 18. The Test System responds with a TransactionEventResponse |
| 16. 19. The Charging Station sends a TransactionEventRequest | 17. 20. The Test System responds with a TransactionEventResponse |
| 18. 21. The Charging Station sends a TransactionEventRequest | 19. 22. The Test System responds with a TransactionEventResponse |
| 20. 23. Execute Reusable State <i>StopAuthorized</i> Execute Reusable State <i>EVDIsconnected</i> Execute Reusable State <i>ParkingBayUnoccupied</i> | |
| 21. 24. The Charging Station sends a TransactionEventRequest | 22. 25. The Test System responds with a TransactionEventResponse |

| Tool validations |
|---|
| <p>Note: <i>In the validation steps the value of TransactionEventRequest.timestamp of:</i></p> <ul style="list-style-type: none"> - last TransactionEventRequest.eventType = Started is called: TxStartDateTime, - the first TransactionEventRequest with chargingState = Charging is called: StartChargingTime, - the next TransactionEventRequest in which chargingState <> Charging is called: EndChargingTime. + <p>* Step 5 Step 6: (MinCost)</p> <p>Message TransactionEventRequest with eventType Ended from reusable states leading up to <i>ParkingBayUnoccupied</i> must have:</p> <ul style="list-style-type: none"> - costDetails.failureToCalculate must be <omitted> - costDetails.failureReason must be <omitted> - costDetails.totalCost.currency must be EUR - costDetails.totalCost.typeOfCost must be MinCost - costDetails.totalUsage.chargingTime must be <EndChargingTime> - <StartChargingTime> - costDetails.totalCost.chargingTime.exclTax must be 16.00 - costDetails.totalCost.chargingTime.inclTax must be 19.20 - costDetails.totalCost.chargingTime.taxRates[0].type t20_0 - costDetails.totalCost.chargingTime.taxRates[0].tax 20.0 - costDetails.totalCost.energy must be <omitted> - costDetails.totalCost.fixed must be <omitted> - costDetails.totalCost.idleTime must be <omitted> - costDetails.totalCost.reservation must be <omitted> - costDetails.totalCost.total.exclTax must be costDetails.totalCost.chargingTime.exclTax - costDetails.totalCost.total.inclTax must be costDetails.totalCost.chargingTime.inclTax - costDetails.chargingPeriods[0].tariffId must be Test System1 - costDetails.chargingPeriods[0].startPeriod must be <TxStartDateTime> - costDetails.chargingPeriods[0].dimensions[0].type must be ChargingTime - costDetails.chargingPeriods[0].dimensions[0].volume must be costDetails.totalUsage.chargingTime |

Tool validations

* ~~Step 9~~ Step 11: (NormalCost)

~~Note: The value of TransactionEventRequest.timestamp of last TransactionEventRequest.eventType is Started is called TxStartDateTime.~~

Message **TransactionEventRequest** with **eventType** *Ended* from reusable states leading up to **ParkingBayUnoccupied** must have:

- **costDetails.failureToCalculate** must be <omitted>
- **costDetails.failureReason** must be <omitted>
- **costDetails.totalCost.currency** must be *EUR*
- **costDetails.totalCost.typeOfCost** must be *NormalCost*
- **costDetails.totalUsage.chargingTime** must be <EndChargingTime> - <StartChargingTime>
- **costDetails.totalCost.chargingTime.exclTax** must be **costDetails.totalUsage.chargingTime**
- **costDetails.totalCost.chargingTime.inclTax** must be **costDetails.totalCost.chargingTime.exclTax** * 1.20
- **costDetails.totalCost.chargingTime.taxRates[0].type** *t20_0*
- **costDetails.totalCost.chargingTime.taxRates[0].tax** *20.0*
- ~~**costDetails.totalUsage.chargingTime** must be 30~~
- **costDetails.totalCost.energy** must be <omitted>
- **costDetails.totalCost.fixed** must be <omitted>
- **costDetails.totalCost.idleTime** must be <omitted>
- **costDetails.totalCost.reservation** must be <omitted>
- **costDetails.totalCost.total.exclTax** must be **costDetails.totalCost.chargingTime.exclTax**
- **costDetails.totalCost.total.inclTax** must be **costDetails.totalCost.chargingTime.inclTax**
- **costDetails.chargingPeriods[0].tariffId** must be *Test System1*
- **costDetails.chargingPeriods[0].startPeriod** must be <TxStartDateTime>
- **costDetails.chargingPeriods[0].dimensions[0].type** must be *ChargingTime*
- **costDetails.chargingPeriods[0].dimensions[0].volume** must be **costDetails.totalUsage.chargingTime**

Tool validations

* ~~Step 12~~ Step 15: (NormalCost)

Note: ~~The value of TransactionEventRequest.timestamp of last TransactionEventRequest.eventType is Started is called TxStartDateTime.~~

Message TransactionEventRequest with ~~eventType Ended~~ from reusable states leading up to ~~ParkingBayUnoccupied~~ must have:

- ~~eventType Updated~~
- ~~triggerReason must be RunningCost~~
- ~~costDetails.failureToCalculate must be <omitted>~~
- ~~costDetails.failureReason must be <omitted>~~
- ~~costDetails.totalCost.currency must be EUR~~
- ~~costDetails.totalCost.typeOfCost must be NormalCost~~
- ~~costDetails.totalCost.chargingTime.exclTax must be 15.00~~
- ~~costDetails.totalCost.chargingTime.inclTax must be 18.00~~
- ~~costDetails.totalCost.chargingTime.taxRates[0].type t20_0~~
- ~~costDetails.totalCost.chargingTime.taxRates[0].tax 20.0~~
- ~~costDetails.totalUsage.chargingTime must be 15~~
- ~~costDetails.chargingPeriods[0].tariffId must be Test System1~~
- ~~costDetails.chargingPeriods[0].startPeriod must be <txStartDateTime>~~
- ~~costDetails.chargingPeriods[0].dimensions[0].type must be ChargingTime~~
- ~~costDetails.chargingPeriods[0].dimensions[0].volume must be 15~~
- ~~costDetails.chargingPeriods must be <omitted>~~

* ~~Step 14~~ Step 17: (NormalCost)

Note: ~~The value of TransactionEventRequest.timestamp of last TransactionEventRequest.eventType is Started is called TxStartDateTime.~~

Message TransactionEventRequest with ~~eventType Ended~~ from reusable states leading up to ~~ParkingBayUnoccupied~~ must have:

- ~~eventType Updated~~
- ~~triggerReason must be RunningCost~~
- ~~costDetails.failureToCalculate must be <omitted>~~
- ~~costDetails.failureReason must be <omitted>~~
- ~~costDetails.totalCost.currency must be EUR~~
- ~~costDetails.totalCost.typeOfCost must be NormalCost~~
- ~~costDetails.totalCost.chargingTime.exclTax must be 30.00~~
- ~~costDetails.totalCost.chargingTime.inclTax must be 36.00~~
- ~~costDetails.totalCost.chargingTime.taxRates[0].type t20_0~~
- ~~costDetails.totalCost.chargingTime.taxRates[0].tax 20.0~~
- ~~costDetails.totalUsage.chargingTime must be 30~~
- ~~costDetails.chargingPeriods[0].tariffId must be Test System1~~
- ~~costDetails.chargingPeriods[0].startPeriod must be <txStartDateTime>~~
- ~~costDetails.chargingPeriods[0].dimensions[0].type must be ChargingTime~~
- ~~costDetails.chargingPeriods[0].dimensions[0].volume must be 30~~
- ~~costDetails.chargingPeriods must be <omitted>~~

Tool validations

* ~~Step 16~~ Step 19: (MaxCost)

Note: ~~The value of TransactionEventRequest.timestamp of last TransactionEventRequest.eventType is Started is called TxStartDateTime.~~

Message TransactionEventRequest

- eventType must be Updated
- triggerReason must be RunningCost
- costDetails.failureToCalculate must be <omitted>
- costDetails.failureReason must be <omitted>
- costDetails.totalCost.currency must be EUR
- costDetails.totalCost.typeOfCost must be MaxCost
- costDetails.totalCost.chargingTime.exclTax must be 35.00
- costDetails.totalCost.chargingTime.inclTax must be 42.00
- costDetails.totalCost.chargingTime.taxRates[0].type t20_0
- costDetails.totalCost.chargingTime.taxRates[0].tax 20.0
- costDetails.totalUsage.chargingTime must be 45
- ~~- costDetails.totalCost.energy must be <omitted>~~
- ~~- costDetails.totalCost.chargingTime must be <omitted>~~
- ~~- costDetails.totalCost.idleTime must be <omitted>~~
- ~~- costDetails.totalCost.reservation must be <omitted>~~
- ~~- costDetails.totalCost.total.exclTax must be 35.00~~
- ~~- costDetails.totalCost.total.inclTax must be 38.50~~
- costDetails.chargingPeriods must be <omitted> ~~- costDetails.chargingPeriods[0].tariffId must be Test System1~~
- ~~- costDetails.chargingPeriods[0].startPeriod must be <txStartDateTime>~~
- ~~- costDetails.chargingPeriods[0].dimensions[0].type must be ChargingTime~~
- ~~- costDetails.chargingPeriods[0].dimensions[0].volume must be 45~~

* ~~Step 18~~ Step 21: (MaxCost)

Message TransactionEventRequest

- eventType must be Updated
- triggerReason must be RunningCost
- costDetails.failureToCalculate must be <omitted>
- costDetails.failureReason must be <omitted>
- costDetails.totalCost.currency must be EUR
- costDetails.totalCost.typeOfCost must be MaxCost
- costDetails.totalCost.chargingTime.exclTax must be 35.00
- costDetails.totalCost.chargingTime.inclTax must be 42.00
- costDetails.totalCost.chargingTime.taxRates[0].type t20_0
- costDetails.totalCost.chargingTime.taxRates[0].tax 20.0
- costDetails.totalUsage.chargingTime must be 60
- costDetails.chargingPeriods must be <omitted>
- ~~- costDetails.totalCost.energy must be <omitted>~~
- ~~- costDetails.totalCost.chargingTime must be <omitted>~~
- ~~- costDetails.totalCost.idleTime must be <omitted>~~
- ~~- costDetails.totalCost.reservation must be <omitted>~~
- ~~- costDetails.totalCost.total.exclTax must be 35.00~~
- ~~- costDetails.totalCost.total.inclTax must be 38.50~~
- ~~- costDetails.chargingPeriods[0].tariffId must be Test System1~~
- ~~- costDetails.chargingPeriods[0].startPeriod must be <txStartDateTime>~~
- ~~- costDetails.chargingPeriods[0].dimensions[0].type must be ChargingTime~~
- ~~- costDetails.chargingPeriods[0].dimensions[0].volume must be 60~~

| |
|---|
| <p>Tool validations</p> <p>* Step 21 Step 24: (MaxCost)</p> <p>Note: The value of TransactionEventRequest.timestamp of last TransactionEventRequest.eventType is Started is called TxStartDateTime.</p> <p>Message TransactionEventRequest with eventType Ended from reusable states leading up to ParkingBayUnoccupied must have:</p> <ul style="list-style-type: none"> - costDetails.failureToCalculate must be <omitted> - costDetails.failureReason must be <omitted> - costDetails.totalCost.currency must be EUR - costDetails.totalCost.typeOfCost must be MaxCost - costDetails.totalUsage.chargingTime must be <EndChargingTime> - <StartChargingTime> - costDetails.totalCost.chargingTime.exclTax must be 35.00 - costDetails.totalCost.chargingTime.inclTax must be 42.00 - costDetails.totalCost.chargingTime.taxRates[0].type t20_0 - costDetails.totalCost.chargingTime.taxRates[0].tax 20.0 - costDetails.totalCost.energy must be <omitted> - costDetails.totalCost.fixed must be <omitted> - costDetails.totalCost.idleTime must be <omitted> - costDetails.totalCost.reservation must be <omitted> - costDetails.totalCost.total.exclTax must be costDetails.totalCost.chargingTime.exclTax - costDetails.totalCost.total.inclTax must be costDetails.totalCost.chargingTime.inclTax - costDetails.chargingPeriods[0].tariffId must be Test System1 - costDetails.chargingPeriods[0].startPeriod must be <TxStartDateTime> - costDetails.chargingPeriods[0].dimensions[0].type must be ChargingTime - costDetails.chargingPeriods[0].dimensions[0].volume must be costDetails.totalUsage.chargingTime <p>Post scenario validations:</p> <p>N/a</p> |
|---|

6.2.25. Page 658 - (2026-02) - TC_M_24_CS - GetCertificateStatusRequest is not intended to be sent for the V2G leaf certificate

Updated note

| | Text |
|-----|--|
| Old | Note(s): Step 1/2 are repeated for the V2G Charging Station (leaf), the subCA1 and subCA2 certificates. |
| New | <p>Note(s):</p> <ul style="list-style-type: none"> - Step 1/2 are executed for both subCA1 and subCA2. - Step 1/2 are not intended to be executed for the V2G Charging Station (leaf), but it is not disallowed. |

6.2.26. Page 783 - (2026-02) - TC_O_24_CS - Additions to tool validations

| | |
|----------------|---|
| Test case name | Set Display Message - Second Alwaysfront priority |
| Test case Id | TC_O_24_CS |
| ... | |

| Main (Test scenario) | |
|---|---|
| Charging Station | CSMS |
| 2. The Charging Station responds with a SetDisplayMessageResponse | 1. The Test System sends a SetDisplayMessageRequest with message.id <Generated displayMessageId> message.priority AlwaysFront |
| 4. The Charging Station responds with a SetDisplayMessageResponse | 3. The Test System sends a SetDisplayMessageRequest with message.id <Configured displayMessage2Id> message.priority AlwaysFront |

| Main (Test scenario) | |
|---|--|
| 6. The Charging Station responds with a GetDisplayMessagesResponse | 5. The Test System sends a GetDisplayMessagesRequest with id <Configured displayMessageId> |
| 6. 8. The Charging Station responds with a GetDisplayMessagesResponse | 5. 7. The Test System sends a GetDisplayMessagesRequest with id <Configured displayMessage2Id> |
| 7. 9. The Charging Station sends a NotifyDisplayMessagesRequest | 8. 10. The Test System responds with a NotifyDisplayMessagesResponse . |
| Note(s): - If tbc is True at Step 7 9 then step 7 9 and 8 10 will be repeated - The message from step 1 is NOT displayed anymore and is replaced by the message from step 5 7 . | |

| Tool validations |
|---|
| * Step 2: Message SetDisplayMessageResponse - status Accepted * Step 4: Message SetDisplayMessageResponse - status Accepted * Step 6: Message GetDisplayMessagesResponse - status Unknown * Step 6: Step 8: Message GetDisplayMessagesResponse - status Accepted * Step 7: Step 9: Message NotifyDisplayMessagesRequest - requestId <Generated requestId> |
| Post scenario validations: - N/a |

6.2.27. Page 567/568/569 - (2026-02) - TC_K_116_CS - Updated limits to more practical ones and aligned chargingProfileIds

Aligned the chargingProfileIds, so they are replacing each other.

| | |
|-----------------------|---|
| Test case name | Renegotiating a Charging Schedule ISO 15118-20 - Adjusting charging schedule when energy needs change |
| Test case Id | TC_K_116_CS |
| ... | |

| Main (Test scenario) | |
|--|---|
| Charging Station | CSMS |
| Manual Action: Use EV to trigger renegotiation requesting: departureTime <Current DateTime + 2 hours> evTargetEnergyRequest* 5000 6000 | |
| 1. The Charging Station sends a NotifyEVChargingNeedsRequest . | 2. The Test System responds with a NotifyEVChargingNeedsResponse . With status Accepted |

| Main (Test scenario) | |
|--|--|
| 4. The Charging Station responds with a SetChargingProfileResponse | <p>3. The Test System sends a SetChargingProfileRequest with</p> <p>chargingProfile.chargingProfilePurpose TxProfile</p> <p>chargingProfile.transactionId <Provided transactionId from before></p> <p>chargingProfile.chargingSchedule[0].id 10</p> <p>chargingProfile.chargingSchedule[0].chargingRateUnit <Configured chargingRateUnit></p> <p>chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].startPeriod 0</p> <p>chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].limit 2.5 6 * <limit multiplier></p> <p>Note: Check [csKSmartChargingChargingProfileLimits] for <limit multiplier></p> |
| ... | |
| 10. The Charging Station responds with a SetChargingProfileResponse | <p>9. The Test System sends a SetChargingProfileRequest with</p> <p>chargingProfile.id <Same id as step 3></p> <p>chargingProfile.chargingProfilePurpose TxProfile</p> <p>chargingProfile.transactionId <Provided transactionId from before></p> <p>chargingProfile.chargingSchedule[0].id 10</p> <p>chargingProfile.chargingSchedule[0].chargingRateUnit <Configured chargingRateUnit></p> <p>chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].startPeriod 0</p> <p>chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].limit 5 10 * <limit multiplier></p> <p>chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].limit * <limit multiplier></p> <p>Note: Check [csKSmartChargingChargingProfileLimits] for <limit multiplier></p> |
| ... | |
| 16. The Charging Station responds with a SetChargingProfileResponse | <p>15. The Test System sends a SetChargingProfileRequest with</p> <p>chargingProfile.id <Same id as step 3></p> <p>chargingProfile.chargingProfilePurpose TxProfile</p> <p>chargingProfile.transactionId <Provided transactionId from before></p> <p>chargingProfile.chargingSchedule[0].id 10</p> <p>chargingProfile.chargingSchedule[0].chargingRateUnit <Configured chargingRateUnit></p> <p>chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].startPeriod 0</p> <p>chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].limit 2 10 * <limit multiplier></p> <p>Note: Check [csKSmartChargingChargingProfileLimits] for <limit multiplier></p> |

| Tool validations |
|---|
| <p>* Step 1:</p> <p>Message: NotifyEVChargingNeedsRequest</p> <ul style="list-style-type: none"> - evseld must be <Configured evseld> - chargingNeeds.acChargingParameters must be <omitted> - chargingNeeds.dcChargingParameters must be <omitted> - chargingNeeds.v2xChargingParameters.evTargetEnergyRequest must be 5000 6000 - chargingNeeds.v2xChargingParameters.evTargetEnergyRequest must be - chargingNeeds.controlMode must be ScheduledControl - chargingNeeds.departureTime must be <Current DateTime + 2 hours> <p>...</p> |

6.2.28. Page 587 - (2026-02) - TC_K_125_CS Updated dynUpdateTime tool validations

| | |
|----------------|--|
| Test case name | Dynamic charging profiles by external system - Dynamic charging profile configured |
| Test case Id | TC_K_125_CS |
| ... | |

| |
|---|
| Tool validations |
| ... |
| * Step 7: |
| Message ReportChargingProfilesRequest |
| - requestId must be <i>Same Id as in the GetChargingProfilesRequest in step 5</i> |
| - EVSEId must be <i>0</i> |
| There must be one ChargingProfile be reported with |
| - chargingProfile[0].id must be <i><Configured chargingProfileId></i> |
| - chargingProfile[0].stackLevel must be <i>0</i> |
| - chargingProfile[0].chargingProfilePurpose must be <i>ChargingStationMaxProfile</i> |
| - chargingProfile[0].chargingProfileKind must be <i>Dynamic</i> |
| - chargingProfile[0].dynUpdateTime must be <i><Datetime of moment of step 3 between sending manual action for limit 10 and current dateTime></i> |
| - chargingProfile[0].chargingSchedule size must be <i>1</i> |
| - chargingProfile[0].chargingSchedule[0].chargingSchedulePeriod size must be <i>1</i> |
| - chargingProfile[0].chargingSchedule[0].chargingSchedulePeriod[0].startPeriod must be <i>0</i> |
| - chargingProfile[0].chargingSchedule[0].chargingSchedulePeriod[0].operationMode <i>ExternalSetpoint</i> |
| - chargingProfile[0].chargingSchedule[0].chargingSchedulePeriod[0].limit must be <i><omitted></i> |
| - chargingProfile[0].chargingSchedule[0].chargingSchedulePeriod[0].setpoint must be <i>10 * <limit multiplier></i> |
| There must be one ChargingProfile be reported with |
| - chargingProfile[1].id must be <i><Configured chargingProfileId2></i> |
| - chargingProfile[1].stackLevel must be <i>1</i> |
| - chargingProfile[1].chargingProfilePurpose must be <i>ChargingStationMaxProfile</i> |
| - chargingProfile[1].chargingProfileKind must be <i>Dynamic</i> |
| - chargingProfile[1].dynUpdateTime must be <i><Datetime of moment of step 3 between sending manual action for limit 8 and current dateTime></i> |
| ... |

6.2.29. Page 588 - (2026-02) - TC_K_129_CS to TC_K_135_CS improvements

The "Absolute" charging profiles that were used have been replaced by "Relative" charging profiles for easier testing.

6.2.30. Page 596 - (2026-02) - TC_K_136_CS - Fixed incorrect timezone usage

TC_K_136_CS was using the value "UTC+02:00" for variable TimeZone, but that is incorrect. For a time offset of 2 hours the variable TimeOffset must be used with a value of "+02:00".

6.2.31. Page 590 - (2026-02) - TC_K_130_CS to TC_K_135_CS - Reusable state Booted removed

Reusable state [\[booted\]](#) removed from preparations.

6.2.32. Page 596 - (2026-02) - TC_K_136_CS - Remove timezone configuration

Timezone configuration was removed from preparations configuration state.

| |
|---|
| Before (Preparations) |
| Configuration State: ClockCtrlr.TimeZone is "" (if present) N/a |

6.2.33. Page 664/665 - (2026-02) - TC_M_100_CS - Reduced amount of certificates sent

| | |
|----------------|--|
| Test case name | Certificate Installation EV - ISO 15118-20 - Success |
| Test case Id | TC_M_100_CS |
| ... | |

| |
|---|
| Before (Preparations) |
| Configuration State: -The test case calls <i>SendISO15118AuthorizationMethod</i> method with parameter <i>PnC</i> in order to inform the EV emulator about the expected authorization method. -The test case calls <i>SendInstallISO15118CertificateMethod</i> method in order to trigger the EV emulator to initiate installing at most 5 EV certificates. |

| | |
|---|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| Note: EV emulator accepts at most 5 contracts. | |
| 1. The Charging Station sends a Get15118EVCertificateRequest | 2. The Test System responds with a Get15118EVCertificateResponse with status <i>Accepted</i> exiResponse <i><Raw CertificateInstallationRes response for the EV, Base64 encoded.></i> remainingContracts <i><Configured</i> <i>numberOfSupportedEvCertificates></i> 1 1 |
| 3. The Charging Station sends a Get15118EVCertificateRequest | 4. The Test System responds with a Get15118EVCertificateResponse with status <i>Accepted</i> exiResponse <i><Raw CertificateInstallationRes response for the EV, Base64 encoded.></i> remainingContracts <i><Configured</i> <i>numberOfSupportedEvCertificates></i> 2 0 |
| 5. The Charging Station sends a Get15118EVCertificateRequest SHALL NOT send another | 6. The Test System responds with a Get15118EVCertificateResponse with status <i>Accepted</i> exiResponse <i><Raw CertificateInstallationRes response for the EV, Base64 encoded.></i> remainingContracts <i><Configured</i> <i>numberOfSupportedEvCertificates></i> 3 |
| 6. Execute Reusable State <i>Authorized15118</i> | |
| 7. Execute Reusable State <i>EnergyTransferStarted</i> | |

| |
|--|
| Tool validations |
| <p>* Step 1: Message: Get15118EVCertificateRequest - action must be <i>Install</i> - maximumContractCertificateChains must be 5 NOT be omitted</p> <p>* Step 3: Message: Get15118EVCertificateRequest - action must be <i>Install</i> - maximumContractCertificateChains must be 5 NOT be omitted</p> <p>* Step 5: Message: Get15118EVCertificateRequest - action must be <i>Update</i> - maximumContractCertificateChains must be 5</p> |

6.2.34. Page 666 - (2026-02) - TC_M_101_CS - Removed AdditionalRootCertificateCheck note

| | |
|-----------------------|---|
| Test case name | Install CA certificate - OEMRootCertificate |
| Test case Id | TC_M_101_CS |
| ... | |

| | |
|--|-------------|
| Main (Test scenario) | |
| Charging Station | CSMS |
| 1. Execute Reusable State <i>CertificateInstalled</i> for certificateType <i>OEMRootCertificate</i> (Root-2) Note(s): When the Charging Station has the following configuration; AdditionalRootCertificateCheck implemented with value true, then a custom OEMRootCertificate should be used. | |
| 2. Execute Reusable State <i>GetInstalledCertificates</i> for certificateType <i>OEMRootCertificate</i> | |

749

6.2.35. Page 749-752 - (2026-02) - TC_N_105_CS - Use existing monitoring configurations and check the disabled monitoring events are not sent

| | |
|-----------------------|--|
| Test case name | Set Variable Monitoring - Set Frequent Periodic Variable Monitoring - Periodic |
| Test case Id | TC_N_105_CS |
| ... | |

| |
|--|
| Before (Preparations) |
| Configuration State: N/a |
| Memory State: This test requires the Monitoring Base to be set to <i>All</i> . - SetMonitoringBaseRequest with monitoringBase = <i>All</i> . This test requires the existence of a <i>Periodic</i> monitor on a (numerical) variable. It is not mandated which variables are required to be monitored. This test uses the variable "Power" of component "EVSE", which is most likely to be available for monitoring. |
| Reusable State(s): N/a |

| | |
|-----------------------------|-------------|
| Main (Test scenario) | |
| Charging Station | CSMS |

| | |
|---|--|
| Main (Test scenario) | |
| 2. Charging Station responds with a SetVariableMonitoringResponse | <p>1. Test System sends a SetVariableMonitoringRequest with setMonitoringData[0].value 1 <Configured Clock Aligned MeterValues Interval></p> <p>setMonitoringData[0].type <i>Periodic</i></p> <p>setMonitoringData[0].severity <i><Configured severity></i></p> <p>setMonitoringData[0].component.name <i><Configured threshold monitor component></i></p> <p>setMonitoringData[0].component.evse.id <i><Configured evseld></i></p> <p>setMonitoringData[0].variable.name <i><Configured threshold monitor component variable></i></p> <p>setMonitoringData[0].periodicEventStream.interval 10 <Configured Clock Aligned MeterValues Interval> * 2</p> <p>setMonitoringData[0].periodicEventStream.values 30 <Configured Clock Aligned MeterValues Interval> * 4</p> |
| 3. Charging Station sends a OpenPeriodicEventStreamRequest | 4. Test System responds with a OpenPeriodicEventStreamResponse with status <i>Accepted</i> |
| 6. Charging Station response with a GetPeriodicEventStreamResponse | 5. Test System sends a GetPeriodicEventStreamRequest |
| Note: Test System waits for 20 seconds | |
| Note : Waits <Configured Clock Aligned MeterValues Interval> * 2 + 1 seconds. | |
| <p>7. Charging Station sends a NotifyPeriodicEventStream using RFC framework SEND</p> <p>AND</p> <p>SHALL NOT send a NotifyEventRequest with</p> <ul style="list-style-type: none"> - eventData[0].trigger must be <i>Periodic</i> - eventData[0].variableMonitoringId must be <i><SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2></i> - eventData[0].component.name must be <i><Configured threshold monitor component></i> - eventData[0].variable.name must be <i><Configured threshold monitor component variable></i> + | After 10 seconds |
| Note : Waits <Configured Clock Aligned MeterValues Interval> * 2 + 1 seconds. | |
| <p>8 Charging Station sends a NotifyPeriodicEventStream using RFC framework SEND</p> <p>AND</p> <p>SHALL NOT send a NotifyEventRequest with</p> <ul style="list-style-type: none"> - eventData[0].trigger must be <i>Periodic</i> - eventData[0].variableMonitoringId must be <i><SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2></i> - eventData[0].component.name must be <i><Configured threshold monitor component></i> - eventData[0].variable.name must be <i><Configured threshold monitor component variable></i> + | After another 10 seconds |

| Main (Test scenario) | |
|--|---|
| 10. Charging Station responds with a SetVariableMonitoringResponse | <p>9. Test System sends a SetVariableMonitoringRequest with setMonitoringData[0].id <code><SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2></code></p> <p>setMonitoringData[0].value <code><Configured Clock Aligned MeterValues Interval></code></p> <p>setMonitoringData[0].type <code>Periodic</code></p> <p>setMonitoringData[0].severity <code><Configured severity></code></p> <p>setMonitoringData[0].component.name <code><Configured threshold monitor component></code></p> <p>setMonitoringData[0].component.evse.id <code><Configured evseld></code></p> <p>setMonitoringData[0].variable.name <code><Configured threshold monitor component variable></code></p> <p>setMonitoringData[0].periodicEventStream <code><omitted></code></p> |
| 11 Charging Station sends a NotifyPeriodicEventStream using RFC framework SEND | This step may be omitted if buffer already empty This step is optional. It is not sent if the buffer is already empty. |
| 12. Charging Station sends a ClosePeriodicEventStreamRequest | 13. Test System responds with a ClosePeriodicEventStreamResponse |
| 14. Charging Station sends a NotifyEventRequest AND SHALL NOT send a NotifyPeriodicEventStream with - id set to <code><OpenPeriodicEventStreamRequest.constantStreamData.id of step 3></code> | 15. Test System responds with a NotifyEventResponse |
| Note: Step 14 and 15 will repeat every second | |
| Note: The Test System waits 20 seconds, before ending the test case. | |
| Note: The Test System waits <code><Configured Clock Aligned MeterValues Interval> * 2 + 1</code> seconds, before ending the test case. | |

Tool validations

* Step 2:

Message: **SetVariableMonitoringResponse**

- **setMonitoringResult[0].id** must be *<not omitted>*
- **setMonitoringResult[0].status** must be *Accepted*
- **setMonitoringResult[0].type** must be *Periodic*
- **setMonitoringResult[0].severity** must be *<Configured severity>*
- **setMonitoringResult[0].component.name** must be *<Configured threshold monitor component>*
- **setMonitoringResult[0].component.evse.id** must be *<Configured evseld>*
- **setMonitoringResult[0].variable.name** must be *<Configured threshold monitor component variable>*

* Step 3:

Message: **OpenPeriodicEventStreamRequest**

- **constantStreamData.id** must be *<not omitted>*
- **constantStreamData.variableMonitoringId** must be *<SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2>*
- **constantStreamData.params.interval** must be ~~40~~ *<Configured Clock Aligned MeterValues Interval> * 2*
- **constantStreamData.params.values** must be ~~30~~ *<Configured Clock Aligned MeterValues Interval> * 4*

* Step 6:

Message: **GetPeriodicEventStreamResponse**

contains at least

- **constantStreamData[0].id** must be *<not omitted>*
- **constantStreamData[0].variableMonitoringId** must be *<SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2>*
- **constantStreamData[0].params.interval** must be ~~40~~ *<Configured Clock Aligned MeterValues Interval> * 2*
- **constantStreamData[0].params.values** must be ~~30~~ *<Configured Clock Aligned MeterValues Interval> * 4*

* Step 7:

Message: **NotifyPeriodicEventStream**

- **id** must be *<OpenPeriodicEventStreamRequest.constantStreamData.id of step 3>*
- **data** array must contain ~~9 or 10~~ *1 or 2* elements

* Step 8:

Message: **NotifyPeriodicEventStream**

- **id** must be *<OpenPeriodicEventStreamRequest.constantStreamData.id of step 3>*
- **data** array must contain ~~9 or 10~~ *1 or 2* elements

| |
|---|
| Tool validations |
| <p>* Step 10:</p> <p>Message: SetVariableMonitoringResponse</p> <ul style="list-style-type: none"> - setMonitoringResult[0].id must be <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2> - setMonitoringResult[0].status must be <i>Accepted</i> - setMonitoringResult[0].type must be <i>Periodic</i> - setMonitoringResult[0].severity must be <Configured severity> - setMonitoringResult[0].component.name must be <Configured threshold monitor component> - setMonitoringResult[0].component.evse.id must be <Configured evseld> - setMonitoringResult[0].variable.name must be <Configured threshold monitor component variable> <p>* Step 11:</p> <p>Message: NotifyPeriodicEventStream</p> <ul style="list-style-type: none"> - id must be <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> <p>* Step 12:</p> <p>Message: ClosePeriodicEventStreamRequest</p> <ul style="list-style-type: none"> - id <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> <p>* Step 14:</p> <p>Message: NotifyEventRequest</p> <ul style="list-style-type: none"> - generatedAt must be <not omitted> - eventData[0].trigger must be <i>Periodic</i> - eventData[0].actualValue must be <not omitted> - eventData[0].variableMonitoringId must be <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2> - eventData[0].severity must be <Configured severity> - eventData[0].component.name must be <Configured threshold monitor component> - eventData[0].component.evse.id must be <Configured evseld> - eventData[0].variable.name must be <Configured threshold monitor component variable> <p>Post scenario validations:</p> <p>* After step 12 no message of type NotifyPeriodicEventStream may be sent with</p> <p>- id set to <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3></p> <p>N/a</p> |

6.2.36. Page 753/754 - (2026-02) - TC_N_106_CS - Use existing monitoring configurations and check the disabled monitoring events are not sent

| | |
|-----------------------|---|
| Test case name | Set Variable Monitoring - Set Frequent Periodic Variable Monitoring - CSMS rejects stream |
| Test case Id | TC_N_106_CS |
| ... | |

| |
|--|
| Before (Preparations) |
| <p>Configuration State:</p> <p>N/a</p> <p>Memory State:</p> <p>This test requires the Monitoring Base to be set to All.</p> <ul style="list-style-type: none"> - SetMonitoringBaseRequest with monitoringBase = <i>All</i>. <p>Reusable State(s): N/a</p> |

| | |
|----------------------|------|
| Main (Test scenario) | |
| Charging Station | CSMS |

| Main (Test scenario) | |
|---|--|
| 2. Charging Station responds with a SetVariableMonitoringResponse | <p>1. Test System sends a SetVariableMonitoringRequest with setMonitoringData[0].value <Configured Clock Aligned MeterValues Interval> setMonitoringData[0].type Periodic setMonitoringData[0].severity <Configured severity> setMonitoringData[0].component.name <Configured threshold monitor component variable> setMonitoringData[0].component.evse.id <Configured evseld> setMonitoringData[0].variable.name <Configured threshold monitor component variable> setMonitoringData[0].periodicEventStream.interval 10 <Configured Clock Aligned MeterValues Interval> * 2 setMonitoringData[0].periodicEventStream.values 30 <Configured Clock Aligned MeterValues Interval> * 4</p> |
| 3. Charging Station sends a OpenPeriodicEventStreamRequest | <p>4. Test System responds with a OpenPeriodicEventStreamResponse with status Rejected</p> |
| <p>5. Charging Station sends a NotifyEventRequest AND SHALL NOT send a NotifyPeriodicEventStream with - id set to <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2></p> | <p>6. Test System responds with a NotifyEventResponse</p> |
| Note: Step 5 and 6 will repeat every second | |
| Note: The Test System waits 11 seconds, before ending the testcase. | |
| Note: The Test System waits <Configured Clock Aligned MeterValues Interval> * 2 + 1 seconds, before ending the testcase. | |

| |
|---|
| Tool validations |
| <p>* Step 2:</p> <p>Message: SetVariableMonitoringResponse</p> <ul style="list-style-type: none"> - setMonitoringResult[0].id must be <not omitted> - setMonitoringResult[0].status must be <i>Accepted</i> - setMonitoringResult[0].type must be <i>Periodic</i> - setMonitoringResult[0].severity must be <Configured severity> - setMonitoringResult[0].component.name must be <Configured threshold monitor component variable> - setMonitoringResult[0].component.evse.id must be <Configured evseld> - setMonitoringResult[0].variable.name must be <Configured threshold monitor component variable> <p>No message of type NotifyPeriodicEventStream shall be sent with</p> <ul style="list-style-type: none"> - id set to <SetVariableMonitoringResponse.setMonitoringResult[0].id> <p>* Step 3:</p> <p>Message: OpenPeriodicEventStreamRequest</p> <ul style="list-style-type: none"> - constantStreamData.id must be <not omitted> - constantStreamData.variableMonitoringId must be <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2> - constantStreamData.params.interval must be 10 <Configured Clock Aligned MeterValues Interval> * 2 - constantStreamData.params.values must be 30 <Configured Clock Aligned MeterValues Interval> * 4 <p>* Step 5:</p> <p>Message: NotifyEventRequest</p> <ul style="list-style-type: none"> - generatedAt must be <not omitted> - eventData[0].trigger must be <i>Periodic</i> - eventData[0].actualValue must be <not omitted> - eventData[0].variableMonitoringId must be <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2> - eventData[0].severity must be <Configured severity> - eventData[0].component.name must be <Configured threshold monitor component variable> - eventData[0].component.evse.id must be <Configured evseld> - eventData[0].variable.name must be <Configured threshold monitor component variable> <p>Post scenario validations:</p> <p>No message of type NotifyPeriodicEventStream shall be sent with</p> <ul style="list-style-type: none"> - id set to <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2> N/a |

6.2.37. Page 755/756 - (2026-02) - TC_N_108_CS - Use existing monitoring configurations and check the disabled monitoring events are not sent

| | |
|-----------------------|--|
| Test case name | Set Variable Monitoring - Close Periodic Event Streams |
| Test case Id | TC_N_108_CS |
| ... | |

| |
|---|
| Before (Preparations) |
| <p>Configuration State:</p> <p>N/a</p> <p>Memory State:</p> <p>This test requires the Monitoring Base to be set to All.</p> <ul style="list-style-type: none"> - SetMonitoringBaseRequest with monitoringBase = All. <p>This test requires the existence of a <i>Periodic</i> monitor on a (numerical) variable. It is not mandated which variables are required to be monitored. This test uses the variable "Power" of component "EVSE", which is most likely to be available for monitoring.</p> <p>Reusable State(s): N/a</p> |

| | |
|----------------------|------|
| Main (Test scenario) | |
| Charging Station | CSMS |

| Main (Test scenario) | |
|--|--|
| 2. Charging Station responds with a SetVariableMonitoringResponse | <p>1. Test System sends a SetVariableMonitoringRequest with setMonitoringData[0].value 1 <Configured Clock Aligned MeterValues Interval></p> <p>setMonitoringData[0].type Periodic</p> <p>setMonitoringData[0].severity <Configured severity></p> <p>setMonitoringData[0].component.name <Configured threshold monitor component></p> <p>setMonitoringData[0].component.evse.id <Configured evseld></p> <p>setMonitoringData[0].variable.name <Configured threshold monitor component variable></p> <p>setMonitoringData[0].periodicEventStream.interval 10 <Configured Clock Aligned MeterValues Interval> * 2</p> <p>setMonitoringData[0].periodicEventStream.values 30 <Configured Clock Aligned MeterValues Interval> * 4</p> |
| 3. Charging Station sends a OpenPeriodicEventStreamRequest | 4. Test System responds with a OpenPeriodicEventStreamResponse with status Accepted |
| 6. Charging Station response with a ClearVariableMonitoringResponse | 5. Test System sends a ClearVariableMonitoringRequest with id <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2> |
| 7. Charging Station sends a ClosePeriodicEventStreamRequest | 8. Test System responds with a ClosePeriodicEventStreamResponse |
| Note: The Test System waits 20 seconds, before ending the testcase. | |
| 9. Charging Station SHALL NOT send a NotifyPeriodicEventStream with | |
| - id set to <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> | |
| Note: The Test System waits <Configured Clock Aligned MeterValues Interval> * 2 + 1 seconds, before ending the testcase. | |

| Tool validations |
|---|
| <p>* Step 2:</p> <p>Message: SetVariableMonitoringResponse</p> <ul style="list-style-type: none"> - setMonitoringResult[0].id must be <not omitted> - setMonitoringResult[0].status must be Accepted - setMonitoringResult[0].type must be Periodic - setMonitoringResult[0].severity must be <Configured severity> - setMonitoringResult[0].component.name must be <Configured threshold monitor component> - setMonitoringResult[0].component.evse.id must be <Configured evseld> - setMonitoringResult[0].variable.name must be <Configured threshold monitor component variable> <p>* Step 3:</p> <p>Message: OpenPeriodicEventStreamRequest</p> <ul style="list-style-type: none"> - constantStreamData.id must be <not omitted> - constantStreamData.variableMonitoringId must be <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2> - constantStreamData.params.interval must be 10 <Configured Clock Aligned MeterValues Interval> * 2 - constantStreamData.params.values must be 30 <Configured Clock Aligned MeterValues Interval> * 4 <p>* Step 6:</p> <p>Message: ClearVariableMonitoringResponse</p> <ul style="list-style-type: none"> - clearMonitoringResult[0].status must be Accepted - clearMonitoringResult[0].id must be <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2> <p>* Step 7:</p> <p>Message ClosePeriodicEventStreamRequest</p> <ul style="list-style-type: none"> - id <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> |

| |
|---|
| Tool validations |
| Post scenario validations: * After step 9 no message of type NotifyPeriodicEventStream may be sent with id set to <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> N/a |

6.2.38. Page 757/758 - (2026-02) - TC_N_109_CS - Use existing monitoring configurations

| | |
|----------------|---|
| Test case name | Set Variable Monitoring - Adjust Periodic Event Streams |
| Test case Id | TC_N_109_CS |
| ... | |

| |
|--|
| Before (Preparations) |
| Configuration State: N/a |
| Memory State: This test requires the Monitoring Base to be set to <i>All</i> . - SetMonitoringBaseRequest with monitoringBase = <i>All</i> . This test requires the existence of a <i>Periodic</i> monitor on a (numerical) variable. It is not mandated which variables are required to be monitored. This test uses the variable "Power" of component "EVSE", which is most likely to be available for monitoring. |
| Reusable State(s): N/a |

| | |
|--|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| 2. Charging Station responds with a SetVariableMonitoringResponse | 1. Test System sends a SetVariableMonitoringRequest with setMonitoringData[0].value \neq <Configured Clock Aligned MeterValues Interval> setMonitoringData[0].type <i>Periodic</i> setMonitoringData[0].severity <i><Configured severity></i> setMonitoringData[0].component.name <i><Configured threshold monitor component></i> setMonitoringData[0].component.evse.id <i><Configured evseld></i> setMonitoringData[0].variable.name <i><Configured threshold monitor component variable></i> setMonitoringData[0].periodicEventStream.interval \neq <Configured Clock Aligned MeterValues Interval> * 2 |
| 3. Charging Station sends a OpenPeriodicEventStreamRequest | 4. Test System responds with a OpenPeriodicEventStreamResponse with status <i>Accepted</i> |
| 5. Charging Station sends a NotifyPeriodicEventStream using RFC framework SEND | <i>After 10 seconds</i> |
| 6. Charging Station sends a NotifyPeriodicEventStream using RFC framework SEND | <i>After 10 seconds</i> |
| 7. Charging Station sends a NotifyPeriodicEventStream using RFC framework SEND | <i>After 10 seconds</i> |

| Main (Test scenario) | |
|---|--|
| 9. Charging Station responds with a AdjustPeriodicEventStreamResponse | 8. Test System sends a AdjustPeriodicEventStreamRequest with id <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> params.interval 15 <Configured Clock Aligned MeterValues Interval> * 3 |
| 10. Charging Station sends a NotifyPeriodicEventStream using RFC framework SEND | After 15 seconds |
| 11. Charging Station sends a NotifyPeriodicEventStream using RFC framework SEND | After 15 seconds |
| 12. Charging Station sends a NotifyPeriodicEventStream using RFC framework SEND | After 15 seconds |

| Tool validations |
|--|
| <p>* Step 2: Message: SetVariableMonitoringResponse</p> <ul style="list-style-type: none"> - setMonitoringResult[0].id must be <not omitted> - setMonitoringResult[0].status must be Accepted - setMonitoringResult[0].type must be Periodic - setMonitoringResult[0].severity must be <Configured severity> - setMonitoringResult[0].component.name must be <Configured threshold monitor component> - setMonitoringResult[0].component.evse.id must be <Configured evseld> - setMonitoringResult[0].variable.name must be <Configured threshold monitor component variable> <p>* Step 3: Message: OpenPeriodicEventStreamRequest</p> <ul style="list-style-type: none"> - constantStreamData.id must be <not omitted> - constantStreamData.variableMonitoringId must be <SetVariableMonitoringResponse.setMonitoringResult[0].id of step 2> - constantStreamData.params.interval must be 10 <Configured Clock Aligned MeterValues Interval> * 2 <p>* Step 5: Message: NotifyPeriodicEventStream</p> <ul style="list-style-type: none"> - id must be <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> <p>* Step 6: Message: NotifyPeriodicEventStream shall be sent about 10 seconds after step 5</p> <ul style="list-style-type: none"> - id must be <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> <p>* Step 7: Message: NotifyPeriodicEventStream shall be sent about 10 seconds after step 6</p> <ul style="list-style-type: none"> - id must be <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> <p>* Step 9: Message: AdjustPeriodicEventStreamResponse</p> <ul style="list-style-type: none"> - status must be Accepted <p>* Step 10: Message: NotifyPeriodicEventStream</p> <ul style="list-style-type: none"> - id must be <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> <p>* Step 11: Message: NotifyPeriodicEventStream shall be sent about 15 seconds after step 10</p> <ul style="list-style-type: none"> - id must be <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> <p>* Step 12: Message: NotifyPeriodicEventStream shall be sent about 15 seconds after step 11</p> <ul style="list-style-type: none"> - id must be <OpenPeriodicEventStreamRequest.constantStreamData.id of step 3> |

| |
|--|
| Tool validations |
| Post scenario validations: The interval of steps 5, 6, 7 shall be equal to <Configured Clock Aligned MeterValues Interval> * 2 The interval of steps 10, 11, 12 shall be equal to <Configured Clock Aligned MeterValues Interval> * 3 |

6.2.39. Page 805/806 - (2026-02) - TC_O_101_CS - Manual action and reusable state Authorized added

User language selection manual action added and used reusable state Authorized instead.

| | |
|---|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| 1. Execute Reusable State Authorized with AuthorizeResponse : idTokenInfo.language1 <Configured language> | |
| <u>Manual Action:</u> Present idToken. | |
| 1. The Charging Station sends an AuthorizeRequest Note 1: This step needs to be executed: unless (AuthEnabled is implemented with mutability ReadOnly AND the value is set to false) OR a start button as described at Use case C02 is used (This must be configured at the Test System) OR the idToken is cached. Note 2: Alternatively, EV Driver may select <Configured language1> using button or display on charging station. | 2. The Test System responds with an AuthorizeResponse with idTokenInfo.status Accepted idTokenInfo.language1 <Configured language1> <Configured language> |
| <u>Manual action:</u> User (customer) selects desired language. | |
| <u>Note(s):</u> - The Charging Station will use the language preference of the EV Driver to display messages. | |
| 3. The Charging Station responds with a SetDisplayMessageResponse | 2. The Test System sends a SetDisplayMessageRequest with message.id <Generated displayMessageId> message.message[0].language <Configured supported languages> message.message.language <Configured language> message.message[0].content contentSupported message.message.content contentSupported message.messageExtra[0].language <Configured language1> <Configured customer language> message.messageExtra[0].content ContentInCustomerLanguage1 ContentInCustomerLanguage |

| |
|--|
| Tool validations |
| * Step 1: Message: AuthorizeRequest - idToken.idToken <Configured valid_idtoken_idtoken> - idToken.type <Configured valid_idtoken_type> * Step 4: Visual inspection Message: SetDisplayMessageResponse - The Message ContentInCustomerLanguage1 is shown on display. |
| Post scenario validations: - After step 2 the user has selected their preferred language, the Charging Station will show messages with language preference (<Configured language1 customer language>) of the EV Driver, including the SetDisplayMessage of step 2. |

6.2.40. Page 814/815 - (2026-02) - TC_Q_102_CS - Made the testcase more flexible regarding the phases used and added step for NotifyEVChargingScheduleRequest

| | |
|----------------|---|
| Test case name | V2X Authorisation - ISO15118-20 - Charging only (V2X control) before starting V2X - Allowed Energy Transfer modes omitted |
| Test case Id | TC_Q_102_CS |
| ... | |

| |
|---|
| Before (Preparations) |
| Configuration State: - ISO15118Ctrlr.Enabled is true - V2XChargingCtrlr.SupportedEnergyTransferMode contains [<AC_single_phase OR AC_two_phase OR AC_three_phase>, AC_BPT] or [DC, DC_BPT] |
| Memory State: N/a |
| Reusable State(s): N/a |

| | |
|---|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| Communicate that default charging station energy transfer mode will be used | |
| 1. Execute Reusable State Iso1511820V2xControlBpt with controlMode ScheduledControl | |
| 2. Execute Reusable State EVConnectedPreSession | |
| 3. Execute Reusable State [authorized15118] (for 15118-20) | |
| Note(s): - The Test System omits the allowedEnergyTransfer from the AuthorizeResponse. | |
| 4. The Charging Station sends a NotifyEVChargingNeedsRequest Note(s): - This step is captured by [authorized15118] (for 15118-20), but validated on testcase level. | 5. Test System responds with a NotifyEVChargingNeedsResponse with status Accepted |
| 6. Execute Reusable State [energytransferstarted] | |
| 6. The Charging station sends a NotifyEVChargingScheduleRequest | 7. The Test System responds with a NotifyEVChargingScheduleResponse with status Accepted |
| 8. Execute Reusable State [energytransferstarted] | |

| |
|---|
| Tool validations * Step 4: Message: NotifyEVChargingNeedsRequest - evseld must be <Configured evseld> For AC charging station: - chargingNeeds.requestedEnergyTransfer AC_three_phase - chargingNeeds.availableEnergyTransfer [AC_single_phase, AC_two_phase, AC_three_phase, AC_BPT, AC_BPT_DER, AC_DER] - chargingNeeds.requestedEnergyTransfer AC_three_phase or AC_single_phase or AC_two_phase - chargingNeeds.availableEnergyTransfer : <Contains; AC_single_phase OR AC_two_phase OR AC_three_phase> <Contains; AC_BPT> <Other allowed supported values; AC_BPT_DER, AC_DER> For DC charging station: - chargingNeeds.requestedEnergyTransfer DC - chargingNeeds.availableEnergyTransfer [DC, DC_BPT, DC_ACDP, DC_ACDP_BPT] - chargingNeeds.availableEnergyTransfer : <Contains; DC AND DC_BPT> <Other allowed supported values; DC_ACDP, DC_ACDP_BPT> - chargingNeeds.controlMode must be <i>ScheduledControl</i> - chargingNeeds.v2xChargingParameters.maxChargePower must be 10000 (W) - chargingNeeds.v2xChargingParameters.maxDischargePower must be 5000 (W) Post scenario validations: N/a |
|---|

6.2.41. Page 820/821 - (2026-02) - TC_Q_107_CS - Added missing main steps to complete the renegotiation flow

| | |
|----------------|---|
| Test case name | V2X Authorisation - ISO15118-20 - Charging only (V2X control) before starting V2X |
| Test case Id | TC_Q_107_CS |
| ... | |

| Main (Test scenario) | |
|---|---|
| Charging Station | CSMS |
| 1. The Charging Station sends a NotifyEVChargingNeedsRequest <u>Note(s):</u> - This step is captured by [authorized15118] (for 15118-20), but validated on testcase level. | 2. The Test System responds with a NotifyEVChargingNeedsResponse with - status <i>Accepted</i> |
| Setting ChargingOnly charging profile | |

| Main (Test scenario) | |
|--|---|
| <p>3. 4. The Charging Station responds with a SetChargingProfileResponse</p> | <p>4. 3. The Test System sends a SetChargingProfileRequest with evseld <Configured evseld> chargingProfile.chargingProfilePurpose TxProfile chargingProfile.chargingProfileKind Dynamic chargingProfile.transactionId <transactionId> chargingProfile.chargingSchedule[0].chargingRateUnit <Configured chargingRateUnit> chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].startPeriod 0 chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].limit 6 * <limit multiplier> Note: Check [csKSmartChargingChargingProfileLimits] for <limit multiplier> chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].operationMode ChargingOnly</p> |
| <p>5. The Charging station sends a NotifyEVChargingScheduleRequest</p> | <p>6. The Test System responds with a NotifyEVChargingScheduleResponse with status Accepted</p> |
| <p>7. Execute Reusable State EnergyTransferStarted</p> | |
| <p>6. 9. The Charging Station responds with a NotifyAllowedEnergyTransferResponse</p> | <p>5. 8. The Test System sends a NotifyAllowedEnergyTransferRequest with allowedEnergyTransfer [AC_single_phase, AC_BPT, DC, DC_BPT]</p> |
| <p>7. 10. The Charging Station sends a NotifyEVChargingNeedsRequest</p> | <p>8. 11. The Test System responds with a NotifyEVChargingNeedsResponse with - status Accepted</p> |
| <p>13. The Charging Station responds with a SetChargingProfileResponse</p> | <p>12. The Test System sends a SetChargingProfileRequest with chargingProfile.id <Same chargingProfileId as step 3> evseld <Configured evseld> chargingProfile.chargingProfilePurpose TxProfile chargingProfile.chargingProfileKind Dynamic chargingProfile.transactionId <transactionId> chargingProfile.chargingSchedule[0].chargingRateUnit <Configured chargingRateUnit> chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].startPeriod 0 chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].setpoint -7 * <limit multiplier> Note: Check [csKSmartChargingChargingProfileLimits] for <limit multiplier> chargingProfile.chargingSchedule[0].chargingSchedulePeriod[0].operationMode CentralSetpoint</p> |
| <p>14. The Charging station sends a NotifyEVChargingScheduleRequest</p> | <p>15. The Test System responds with a NotifyEVChargingScheduleResponse with status Accepted</p> |

| |
|---|
| Tool validations |
| <p>* Step 1:</p> <p>Message: NotifyEVChargingNeedsRequest</p> <ul style="list-style-type: none"> - evseld must be <Configured evseld> - chargingNeeds.requestedEnergyTransfer must be one of [AC_single_phase, AC_two_phase, AC_three_phase, DC, DC_ACDP, WPT] - chargingNeeds.availableEnergyTransfer must be <not omitted> <p>* Step 3 Step 4:</p> <p>Message: SetChargingProfileResponse</p> <ul style="list-style-type: none"> - status must be Accepted <p>* Step 6 Step 9:</p> <p>Message: NotifyAllowedEnergyTransferResponse</p> <ul style="list-style-type: none"> - status must be Accepted <p>* Step 7 Step 10:</p> <p>Message: NotifyEVChargingNeedsRequest</p> <ul style="list-style-type: none"> - evseld must be <Configured evseld> - chargingNeeds.requestedEnergyTransfer must be one of [AC_BPT, DC_BPT] - chargingNeeds.availableEnergyTransfer must be <not omitted> <p>* Step 13:</p> <p>Message: SetChargingProfileResponse</p> <ul style="list-style-type: none"> - status must be Accepted |
| <p>Post scenario validations:</p> <p>N/a</p> |

6.2.42. Page 863/864 - (2026-02) - TC_Q_125_CS - Aligned with other V2X ISO 15115-20 / CHAdeMO testcases

| | |
|----------------|--|
| Test case name | Idle operationMode - Idle, minimizing energy consumption - Idle with EvseSleep |
| Test case Id | TC_Q_125_CS |
| ... | |

| |
|--|
| Before (Preparations) |
| <p>Configuration State:</p> <ul style="list-style-type: none"> - SampledDataCtrlr.TxUpdatedInterval = 10 - SampledDataCtrlr.TxUpdatedMeasurands = Energy.Active.Import.Register |
| <p>Memory State:</p> <p>N/a</p> |
| <p>Reusable State(s):</p> <p>State is [evconnectedpresession]</p> <p>IF <Configured EVProtocol> is CHAdeMO THEN</p> <p>State is CHAdeMOV2xControlBpt</p> <p>State is [authorized]</p> <p>State is [evconnectedpresession]</p> <p>ELSE IF <Configured EVProtocol> is ISO15118 THEN</p> <p>State is Iso1511820V2xControlBpt</p> <p>State is [evconnectedpresession]</p> <p>State is [authorized15118] (for 15118-20)</p> <p>END IF</p> <p>State EnergyTransferStarted</p> |

| | |
|----------------------|------|
| Main (Test scenario) | |
| Charging Station | CSMS |

| | |
|--|---|
| Main (Test scenario) | |
| 1. The Charging Station sends a NotifyEVChargingNeedsRequest Note(s) : - This step is captured by the preparation steps, but validated on testcase level. | 2. Test System responds with a NotifyEVChargingNeedsResponse with status Accepted |
| Without EVSE sleeping | |
| 2. 4. The Charging Station responds with a SetChargingProfileResponse with status must be <i>Accepted</i> | 1. 3. The Test System sends a SetChargingProfileRequest with evseld <Configured evseld> chargingProfile - transactionId <transactionId> - chargingProfilePurpose TxProfile - chargingSchedule.chargingRateUnit W - chargingSchedule.chargingSchedulePeriod.operationMode Idle - chargingSchedule.chargingSchedulePeriod.evseSleep false |
| 5. The Charging station sends a NotifyEVChargingScheduleRequest Note(s) : - This step is required if <Configured EVProtocol> is ISO15118 , otherwise this step is optional. | 6. The Test System responds with a NotifyEVChargingScheduleResponse with status Accepted |
| 7. Execute Reusable State <i>EnergyTransferStarted</i> | |
| 3. 8. The Charging Station sends following TransactionEventRequest | 4. 9. The Test System responds with a TransactionEventResponse |
| 5. 10. The Charging Station sends following TransactionEventRequest | 6. 11. The Test System responds with a TransactionEventResponse |
| With EVSE sleeping | |
| 8. 13. The Charging Station responds with a SetChargingProfileResponse | 7. 12. The Test System sends a SetChargingProfileRequest with evseld <Configured evseld> chargingProfile - transactionId <transactionId> - chargingProfilePurpose TxProfile - chargingSchedule.chargingRateUnit W - chargingSchedule.chargingSchedulePeriod.operationMode Idle - chargingSchedule.chargingSchedulePeriod.evseSleep true |
| 9. 14. The Charging Station sends following TransactionEventRequest | 10. 15. The Test System responds with a TransactionEventResponse |
| 11. 16. The Charging Station sends following TransactionEventRequest | 12. 17. The Test System responds with a TransactionEventResponse |

| |
|---|
| Tool validations |
| <p>* Step 2 Step 4:</p> <p>Message: SetChargingProfileResponse</p> <ul style="list-style-type: none"> - status must be <i>Accepted</i> <p>* Step 3 Step 8:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - transactionInfo.transactionId must be <i><transactionId></i> - evseSleep must be <i>false</i> <i><omitted></i> - meterValue[0].sampledValue[0].measurand must be <i>Energy.Active.Import.Register</i> <p>* Step 5 Step 10:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - transactionInfo.transactionId must be <i><transactionId></i> - evseSleep must be <i>false</i> <i><omitted></i> <p>* Step 8 Step 13:</p> <p>Message: SetChargingProfileResponse</p> <ul style="list-style-type: none"> - status must be <i>Accepted</i> <p>* Step 9 Step 14:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - eventData.transactionData.transactionId must be <i><transactionId></i> - evseSleep must be <i>true</i> - meterValue[0].sampledValue[0].measurand must be <i>Energy.Active.Import.Register</i> <p>* Step 11 Step 16:</p> <p>Message: TransactionEventRequest</p> <ul style="list-style-type: none"> - eventType must be <i>Updated</i> - eventData.transactionData.transactionId must be <i><transactionId></i> - evseSleep must be <i>true</i> - meterValue[0].sampledValue[0].measurand must be <i>Energy.Active.Import.Register</i> - meterValue[0].sampledValue[0].value must be identical to value in Step 9 |
| <p>Post scenario validations:</p> <p>N/a</p> |

6.2.43. Page 809-878 - (2026-02) - TC_Q_1XX_CS - NotifyEVChargingNeeds also needs to be used for V2X with CHAdeMO

Added reusable state for BPT with CHAdeMO:

| | |
|--------------------------|---|
| State | CHAdeMOV2xControlBpt |
| System under test | Charging Station |
| Description | Configures the EV to use <i>AC_BPT</i> or <i>DC_BPT</i> energy transfer mode. |
| Exposes | <i><transactionId></i> |

| |
|--|
| Before (Preparations) |
| <p>Configuration State:</p> <ul style="list-style-type: none"> - CHAdeMOCtrlr.Enabled is <i>true</i> - V2XChargingCtrlr.V2XEnabled is <i>true</i> |
| <p>Memory State:</p> <p>N/a</p> |
| <p>Reusable State(s):</p> <p>N/a</p> |

| | |
|---|-------------|
| Main (Test scenario) | |
| Charging Station | CSMS |
| Agree on energy transfer mode | |
| Manual Action: Use EV to communicate EV charging limits: BPT true controlMode DynamicControl maxChargePower 10000 (W) maxDischargePower 5000W (W) | |

| |
|--|
| Tool validations |
| N/a |
| Post scenario validations: N/a |

Applied new BPT reusable state at testcases:

| | |
|-----------------------|-------------|
| Test case name | ... |
| Test case Id | TC_Q_1XX_CS |
| ... | |

| |
|--|
| Before (Preparations) |
| Configuration State: ... |
| Memory State: ... |
| Reusable State(s): IF <Configured EVProtocol> is CHAdeMO THEN State is CHAdeMOV2xControlBpt State is Authorized State is [evconnectedpresession] ELSE IF <Configured EVProtocol> is ISO15118 THEN State is Iso1511820V2xControlBpt State is [evconnectedpresession] State is [authorized15118] (for 15118-20) END IF |

Updated note - NotifyEVChargingNeedsRequest also needs to be sent in case of CHAdeMO:

| | |
|-----|---|
| | Text |
| Old | <u>Note(s):</u> - This step is applicable if <Configured EVProtocol> is ISO15118 and is captured by [authorized15118] (for 15118-20), but validated on testcase level. |
| New | <u>Note(s):</u> - This step is captured by the preparation steps, but validated on testcase level. |

Updated note - NotifyEVChargingScheduleRequest is allowed to be sent in case of CHAdeMO:

| | |
|-----|---|
| | Text |
| Old | <u>Note(s):</u> - This step is applicable if <Configured EVProtocol> is ISO15118 |
| New | <u>Note(s):</u> - This step is required if <Configured EVProtocol> is ISO15118, otherwise this step is optional. |

Preparation steps updated - TC_Q_126_CS & TC_Q_127_CS:

| | Text |
|-----|---|
| Old | State is [csIso1511820V2xControlBpt] |
| New | State is [authorized15118] (for 15118-20) |

6.2.44. Page 877 - (2026-02) - TC_Q_130_CS - Updated tool validation requestedEnergyTransfer

| | |
|----------------|---|
| Test case name | V2X Authorisation - ISO15118-20 - has ISO15118ServiceRenegotiationSupport - Charging needs rejected |
| Test case Id | TC_Q_130_CS |
| ... | |

| Tool validations |
|--|
| <p>* Step 1:</p> <p>Message: NotifyEVChargingNeedsRequest</p> <ul style="list-style-type: none"> - evseld must be <Configured evseld> <p>For AC charging station:</p> <ul style="list-style-type: none"> - chargingNeeds.requestedEnergyTransfer AC_BPT - chargingNeeds.availableEnergyTransfer [AC_single_phase, AC_two_phase, AC_three_phase, AC_BPT, AC_BPT_DER, AC_DER] <p>For DC charging station:</p> <ul style="list-style-type: none"> - chargingNeeds.requestedEnergyTransfer DC_BPT - chargingNeeds.availableEnergyTransfer [DC, DC_BPT, DC_ACDP, DC_ACDP_BPT] <ul style="list-style-type: none"> - chargingNeeds.controlMode must be <i>ScheduledControl</i> - chargingNeeds.v2xChargingParameters.maxChargePower must be 10000 (W) - chargingNeeds.v2xChargingParameters.maxDischargePower must be 5000 (W) <p>* Step 3:</p> <p>Message: NotifyEVChargingNeedsRequest</p> <ul style="list-style-type: none"> - evseld must be <Configured evseld> <p>For AC charging station:</p> <ul style="list-style-type: none"> - chargingNeeds.requestedEnergyTransfer <Not a bi-directional energyTransferMode> - chargingNeeds.availableEnergyTransfer [AC_single_phase, AC_two_phase, AC_three_phase, AC_BPT, AC_BPT_DER, AC_DER] <p>For DC charging station:</p> <ul style="list-style-type: none"> - chargingNeeds.requestedEnergyTransfer DC - chargingNeeds.availableEnergyTransfer [DC, DC_BPT, DC_ACDP, DC_ACDP_BPT] <ul style="list-style-type: none"> - chargingNeeds.controlMode must be <i>ScheduledControl</i> - chargingNeeds.v2xChargingParameters.maxChargePower must be 10000 (W) - chargingNeeds.v2xChargingParameters.maxDischargePower must be <omitted> <p>Post scenario validations:</p> <p>N/a</p> |

6.2.45. Page 881 - (2026-02) - TC_R_101_CS - Test case removed

This testcases has been removed, because TC_B_53_CS will be responsible for performing all device model validations.

6.2.46. Page 899 - (2026-02) - TC_R_108_CS - Use static curves to trigger, instead of configurable ones

| | |
|-------------------|--|
| Test case name | Charging station reporting a DER event |
| Test case Id | TC_R_108_CS |
| Use case Id(s) | R05 |
| Requirement(s) | R05.FR.01, R05.FR.02, R05.FR.03, R05.FR.04 |
| System under test | Charging Station |
| Description | <p>Configure a DER Control which will always trigger and affect the charging rate of the running transaction, then add another DER Control to test overriding the previous one. After that, clearing all DER controls to test it reports that the alert is cleared.</p> <p>This test case uses DER controls that, when installed, trigger during normal operation: a HVMustTrip curve (configured to trip at nominal voltage) and a LFMustTrip curve (configured to trip at nominal frequency). Curves that are a function of power (WattPF, WattVar) or voltage (HV/LVMustTrip, VoltVar, VoltWatt) are usually easier to trigger than frequency-based curves.</p> |
| Purpose | To check if the CS reports when DER controls are taking over. |
| Prerequisite(s) | <p>CS supports DER Control (DCDERCtrlr or ACDERCtrlr is present for EVSE)</p> <p>CS is a DC charging station</p> <p>CS supports ISO15118-20</p> |

| Main (Test scenario) | |
|---|--|
| Charging Station | CSMS |
| <u>Note:</u> Curve HVCURVE is defined as: {(1.00, 5.0), (1.20, 0.16)} – this should trip at nominal voltage (1.00) after 5 seconds. | |
| <u>Note:</u> Curve LFCURVE is defined as: {(50.5, 5.0), (60.5, 10.0)} – this should trip after 5 seconds below 50.5 Hz (EU, and trip after 10 seconds below 60.5 Hz (US). | |
| <u>Note:</u> Wait 10 seconds after start of energy transfer before setting DER control | |
| 2. The Charging Station sends a SetDERControlResponse | <p>1. The Test System sends a SetDERControlRequest with</p> <p>controlId <i>control1</i></p> <p>isDefault <i>true</i></p> <p>controlType <i>HVMustTrip</i></p> <p>curve <i>HVCURVE</i></p> <p>*.priority 6</p> |
| 3. The Charging Station sends a NotifyDERAlarmRequest | 4. The Test System responds with a NotifyDERAlarmResponse |
| 6. The Charging Station sends a ClearDERControlResponse + | 5. The Test System sends a ClearDERControlRequest with |
| 7. The Charging Station sends a NotifyDERAlarmRequest + | isDefault <i>true</i> |
| | 8. The Test System responds with a NotifyDERAlarmResponse |
| 10. The Charging Station sends a SetDERControlResponse | <p>9. The Test System sends a SetDERControlRequest with</p> <p>controlId <i>control2</i></p> <p>isDefault <i>true</i></p> <p>controlType <i>LFMustTrip</i></p> <p>curve <i>LFCURVE</i></p> <p>*.priority 5</p> |
| 11. The Charging Station sends a NotifyDERAlarmRequest | 12. The Test System responds with a NotifyDERAlarmResponse |
| 14. The Charging Station sends a ClearDERControlResponse | 13. The Test System sends a ClearDERControlRequest with |
| 15. The Charging Station sends a NotifyDERAlarmRequest | isDefault <i>true</i> |
| | 16. The Test System responds with a NotifyDERAlarmResponse |

| Tool validations |
|--|
| <p>* Step 2:</p> <p>Message: SetDERControlResponse</p> <ul style="list-style-type: none"> - status must be <i>Accepted</i> <p>* Step 3:</p> <p>Message: NotifyDERAlarmRequest</p> <ul style="list-style-type: none"> - controlType must be HVMustTrip - gridEventFault must be OverVoltage - alarmEnded must be <i>false</i> or <absent> - timestamp must be <Current DateTime> <p>* Step 6:</p> <p>Message: ClearDERControlResponse</p> <ul style="list-style-type: none"> - status must be <i>Accepted</i> <p>* Step 7:</p> <p>Message: NotifyDERAlarmRequest</p> <ul style="list-style-type: none"> - controlType must be HVMustTrip - gridEventFault must be OverVoltage - alarmEnded must be <i>true</i> - timestamp must be <Current DateTime> <p>* Step 10:</p> <p>Message: SetDERControlResponse</p> <ul style="list-style-type: none"> - status must be <i>Accepted</i> <p>* Step 11:</p> <p>Message: NotifyDERAlarmRequest</p> <ul style="list-style-type: none"> - controlType must be LFMustTrip - gridEventFault must be UnderFrequency - alarmEnded must be <i>false</i> or <absent> - timestamp must be <Current DateTime> <p>* Step 14:</p> <p>Message: ClearDERControlResponse</p> <ul style="list-style-type: none"> - status must be <i>Accepted</i> <p>* Step 15:</p> <p>Message: NotifyDERAlarmRequest</p> <ul style="list-style-type: none"> - controlType must be LFMustTrip - gridEventFault must be UnderFrequency# - alarmEnded must be <i>true</i> - timestamp must be <Current DateTime> |
| <p>Post scenario validations:</p> <p>No other NotifyDERAlarmRequest shall be received, except those mentioned in the tool validation steps.</p> |

6.2.47. Page 902/903 - (2026-02) - TC_S_104_CS - Resolved editorial issues

Steps 7 to 14 were incorrectly swapped, and at the tool validations the elements incorrectly refer to Component for some of the entries. Like baseReportData[0].**component**.variable.name

| Test case name | Battery Swap - Charging - Variables validation |
|-------------------|--|
| Test case Id | TC_S_104_CS |
| Use case Id(s) | S04 |
| Requirement(s) | S04.FR.08, S04.FR.09, S04.FR.10 |
| System under test | Charging Station |
| Description | Charging station is able to support battery swapping. |
| Purpose | To verify whether the Charging Station is able to be configured correctly. |

| | |
|-----------------|---|
| Test case name | Battery Swap - Charging - Variables validation |
| Prerequisite(s) | Charging Station supports battery swapping (BatterySwapCtrlr.Available is <i>true</i>) |

| |
|--|
| Before (Preparations) |
| Configuration State: BatterySwapCtrlr.TargetSoc is 80 BatterySwapCtrlr.MaxSoc is 90 |
| Memory State: N/a |
| Reusable State(s): N/a |

| | |
|---|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| 2. The Charging Station responds with GetBaseReportResponse | 1. The Test System sends GetBaseReportRequest with requestId = <Generated requestId> reportBase = <i>FullInventory</i> |
| 3. The Charging Station sends NotifyReportRequest | 4. The Test System responds with NotifyReportResponse |
| 5. The Charging Station sends NotifyReportRequest | 6. The Test System responds with NotifyReportResponse |
| <u>Note:</u> If NotifyReportRequest.tbc is true in step 3 then steps 5 and 6 repeat until NotifyReportRequest.tbc is false in step 5. | |
| 8. The Charging Station responds with SetVariablesResponse | 7. The Test System sends a SetVariablesRequest with setVariableData[0].component.name = <i>BatterySwapCtrlr</i> setVariableData[0].variable.name = <i>TargetSoc</i> setVariableData[0].attributeValue = "91" |
| 10. The Charging Station responds with SetVariablesResponse | 9. The Test System sends a SetVariablesRequest with setVariableData[0].component.name = <i>BatterySwapCtrlr</i> setVariableData[0].variable.name = <i>MaxSoc</i> setVariableData[0].attributeValue = "79" |
| 12. The Charging Station responds with SetVariablesResponse | 11. The Test System sends a SetVariablesRequest with setVariableData[0].component.name = <i>BatterySwapCtrlr</i> setVariableData[0].variable.name = <i>TargetSoc</i> setVariableData[0].attributeValue = "79" |
| 14. The Charging Station responds with SetVariablesResponse | 13. The Test System sends a SetVariablesRequest with setVariableData[0].component.name = <i>BatterySwapCtrlr</i> setVariableData[0].variable.name = <i>MaxSoc</i> setVariableData[0].attributeValue = "79" |

| |
|---|
| Tool validations |
| <p>* Step 2:</p> <p>Message: GetBaseReportResponse</p> <ul style="list-style-type: none"> - status must be <i>Accepted</i> - statusInfo is absent or statusInfo.reasonCode = "NoError" <p>* Step 3:</p> <p>Message: NotifyReportRequest</p> <ul style="list-style-type: none"> - requestId must be <Generated requestId> - generatedAt must be <timestamp at charging station> - seqNo must be 0 <p>* Step 5:</p> <p>Message: NotifyReportRequest</p> <ul style="list-style-type: none"> - requestId must be <Generated requestId> - generatedAt must be <timestamp at charging station> - seqNo must be <incremented seqNo> <p>* Step 8:</p> <p>Message: SetVariablesResponse</p> <ul style="list-style-type: none"> - setVariableResult[0].attributeStatus must be <i>Rejected</i> <p>* Step 10:</p> <p>Message: SetVariablesResponse</p> <ul style="list-style-type: none"> - setVariableResult[0].attributeStatus must be <i>Rejected</i> <p>* Step 12:</p> <p>Message: SetVariablesResponse</p> <ul style="list-style-type: none"> - setVariableResult[0].attributeStatus must be <i>Accepted</i> <p>* Step 14:</p> <p>Message: SetVariablesResponse</p> <ul style="list-style-type: none"> - setVariableResult[0].attributeStatus must be <i>Accepted</i> |
| <p>Post scenario validations:</p> <p>In the collected data of all NotifyReportRequest.reportData it must contain:</p> <ul style="list-style-type: none"> - baseReportData[0].component.name must be <i>TxCtrlr</i> - baseReportData[0].component.variable.name must be <i>TxStartPoint</i> - baseReportData[0].component.variableAttribute.type is absent or must be <i>Actual</i> - baseReportData[0].component.variableAttribute.value must be <i>EVConnected</i> - baseReportData[0].component.variableAttribute.mutability must be <i>ReadOnly</i> - baseReportData[0].component.variableCharacteristics.dataType must be <i>MemberList</i> - baseReportData[0].component.variableCharacteristics.valuesList must be <i>EVConnected</i> - baseReportData[1].component.name must be <i>TxCtrlr</i> - baseReportData[1].component.variable.name must be <i>TxStopPoint</i> - baseReportData[1].component.variableAttribute.type is absent or must be <i>Actual</i> - baseReportData[1].component.variableAttribute.value must be <i>EVConnected</i> - baseReportData[1].component.variableAttribute.mutability must be <i>ReadOnly</i> - baseReportData[1].component.variableCharacteristics.dataType must be <i>MemberList</i> - baseReportData[1].component.variableCharacteristics.valuesList must be <i>EVConnected</i> |

6.2.48. Page 904/905 - (2026-02) - TC_S_105_CS - Updated test case

Removed Target SoC test steps. This will be covered in a separate test case.

| Main (Test scenario) | |
|---|--|
| Charging Station | CSMS |
| 2. The Charging Station responds with GetVariablesResponse | <p>1. Test System sends GetVariablesRequest with:</p> <ul style="list-style-type: none"> - variable.name = "SoC" - component.name = "BatteryCartridge" - component.evse.id = "<i>" - attributeType is omitted |

| Main (Test scenario) | |
|---|---|
| <u>Note:</u> Step 1 and 2 request the SoC for each configured EVSE | |
| 4. The Charging Station responds with GetVariablesResponse | 3. Test System sends SetVariablesRequest with: - variable.name = "TargetSoC" - component.name = "BatterySwapCtrlr" - attributeValue = "<Highest returned SoC value from step 2, that is lower than 96 percent + 2>" - attributeType is omitted |
| 6. 4. The Charging Station responds with GetVariablesResponse SetVariablesResponse | 5. 3. Test System sends SetVariablesRequest with: - variable.name = "MaxSoC" - component.name = "BatterySwapCtrlr" - attributeValue = "<Highest returned SoC value from step 2, that is equal to or lower than 96 percent + 4>" - attributeType is omitted |
| 7. The Charging Station notifies the CSMS about the status change of the slot. | 8. The Test System responds accordingly. |
| <u>Note:</u> Step 7 shall be triggered when the battery's SoC reaches TargetSoC | |
| 9. 5. The Charging Station sends a TransactionEventRequest | 10. 6. The Test System responds with a TransactionEventResponse |
| <u>Note:</u> Step 9 5 shall be triggered when the battery's SoC reaches the MaxSoC | |

6.2.49. Page 916 - (2026-02) - Reusable state Booted now accepts StatusNotification Unavailable [1162]

Booted

| State | Booted |
|-------------------|--|
| System under test | Charging Station |
| Description | This state will reset or power cycle the Charging Station, depending on the testcase. The charging station ends in a state where it is booted back up and is in idle mode. |

| Before (Preparations) |
|---|
| Configuration State: N/a |
| Memory State: N/a |
| Reusable State(s): If Product subtype is <i>Battery Swapping Station</i> , then execute <i>BootedBatterySwapping</i> instead |

| Main (Test scenario) | |
|--|--|
| Charging Station | CSMS |
| <u>Manual Action:</u> Power cycle the Charging Station. OR execute step 1 and 2, depending on the testcase. | |
| 2. The Charging Station responds with a ResetResponse with status Accepted | 1. The Test System sends a ResetRequest |
| 3. The Charging Station notifies the CSMS about the unavailability of all connectors. <u>Note:</u> This step is optional. | 4. The Test System responds accordingly. |
| 5. The Charging Station sends a BootNotificationRequest | 6. The Test System responds with a BootNotificationResponse with status Accepted |

| Main (Test scenario) | |
|--|---|
| 7. The Charging Station notifies the CSMS about the current state of all connectors. | 8. The Test System responds accordingly. |
| 9 The Charging Station sends a SecurityEventNotificationRequest | 10 The Test System responds with a SecurityEventNotificationResponse |

| Tool validations |
|---|
| <p>* Step 2: Message: ResetResponse - status <i>Accepted</i></p> <p>* Step 3: Message: StatusNotificationRequest - connectorStatus <i>Unavailable</i> - evseld not 0 - connectorId not 0 Message: NotifyEventRequest - eventData[0].trigger <i>Delta</i> - eventData[0].actualValue <i>"Unavailable"</i> - eventData[0].component.name <i>"Connector"</i> - eventData[0].variable.name <i>"AvailabilityState"</i></p> <p>* Step 7: Message: StatusNotificationRequest - connectorStatus <i>Available</i> - evseld not 0 - connectorId not 0 Message: NotifyEventRequest - eventData[0].trigger <i>Delta</i> - eventData[0].actualValue <i>"Available"</i> - eventData[0].component.name <i>"Connector"</i> - eventData[0].variable.name <i>"AvailabilityState"</i></p> <p>* Step 9: Message: SecurityEventNotificationRequest - type must be <i>StartupOfTheDevice</i> OR <i>ResetOrReboot</i></p> <p>Post scenario validations: State is <i>Booted</i></p> |

6.2.50. Page 949/952 - (2026-02) - EVConnectedPreSessionBatterySwapping/EVDisconnectedBatterySwapping - Updated tool validations

Tool validations for batteryData required fields removed (validated at schema level). Validations added to ensure the array length matches the number of batteries inserted.

| Tool validations |
|--|
| <p>...</p> <p>* Step 5:</p> <p>Message: BatterySwapRequest</p> <ul style="list-style-type: none"> - eventType must be <i>BatteryIn</i> - requestId must be <i><Configured requestId></i> - idToken.idToken must be <i><Configured valid_idtoken_idtoken></i> <p>For each inserted battery:</p> <ul style="list-style-type: none"> - batteryData.evseId must be <i><not omitted></i> - batteryData.serialNumber must be <i><not omitted></i> - batteryData.soC must be <i><not omitted></i> - batteryData.soH must be <i><not omitted></i> - batteryData[] length must be equal to <i><number of inserted batteries></i> |

6.2.51. Page 1207 - (2026-02) - TC_K_102_CS - Made the testcase useable with a real EV

| | |
|-----------------|---|
| Test case name | Set Charging Profile - limitAtSoc |
| Test case Id | TC_K_102_CS |
| ... | |
| Prerequisite(s) | <ul style="list-style-type: none"> - Charging station supports receiving SoC from the EV. e.g. by CHaDeMo, ISO15118-2 or ISO15118-20 - SmartChargingCtrlr.SupportsFeature[LimitAtSoc] is <i>true</i> EV must have a SoC level of between 1 and 98 percent. |

| Main (Test scenario) | |
|--|---|
| Charging Station | CSMS |
| 2. The Charging Station responds with a SetChargingProfileResponse | <p>1. The Test System sends a SetChargingProfileRequest with evseId <i>0</i></p> <p>chargingProfile.id <i><Configured chargingProfileId></i></p> <p>evseId <i><Configured evseId></i></p> <p>chargingProfile.chargingProfilePurpose <i>TxDefaultProfile</i></p> <p>chargingProfile.chargingSchedule.chargingRateUnit <i><Configured chargingRateUnit></i></p> <p>chargingProfile.chargingSchedule.chargingSchedulePeriod[0].startPeriod <i>0</i></p> <p>chargingProfile.chargingSchedule.chargingSchedulePeriod[0].limit <i>8 * <limit multiplier></i></p> <p>Note: Check [csKSmartChargingChargingProfileLimits] for <i><limit multiplier></i></p> <p>chargingProfile.chargingSchedule.chargingSchedulePeriod[0].numberPhases <i><Configured numberPhases></i></p> <p>chargingProfile.chargingSchedule.limitAtSoc.soc <i><Configured limitAtSocSoc></i> 99</p> <p>chargingProfile.chargingSchedule.limitAtSoc.limit <i>6 * <limit multiplier></i></p> <p>Note: Check [csKSmartChargingChargingProfileLimits] for <i><limit multiplier></i></p> |
| 3. Execute Reusable State <i>EnergyTransferStarted</i> | |
| Manual Action: Use EV to send out a SoC value less than <i><Configured limitAtSocSoc></i> | |
| 5. The Charging Station responds with a GetCompositeScheduleResponse | <p>4. The Test System sends a GetCompositeScheduleRequest with evseId <i><Configured evseId></i></p> <p>duration is <i>900</i></p> <p>chargingRateUnit <i><Configured chargingRateUnit></i></p> |
| Manual Action: Use EV to send out a SoC value greater or equal to <i><Configured limitAtSocSoc></i> | |

Main (Test scenario)

| | |
|--|--|
| <p>7. The Charging Station responds with a GetCompositeScheduleResponse SetChargingProfileResponse</p> | <p>6. The Test System sends a GetCompositeScheduleRequest with evseld <Configured evseld> duration is 900 chargingRateUnit <Configured chargingRateUnit> The Test System sends a SetChargingProfileRequest with evseld <Configured evseld> chargingProfile.id <chargingProfile.id from step 1> chargingProfile.chargingProfilePurpose TxDefaultProfile chargingProfile.chargingSchedule.chargingRateUnit <Configured chargingRateUnit> chargingProfile.chargingSchedule.chargingSchedulePeriod[0].startPeriod 0 chargingProfile.chargingSchedule.chargingSchedulePeriod[0].limit 8 * <limit multiplier> Note: Check [csKSmartChargingChargingProfileLimits] for <limit multiplier> chargingProfile.chargingSchedule.chargingSchedulePeriod[0].numberPhases <Configured numberPhases> chargingProfile.chargingSchedule.limitAtSoc.soc 1 chargingProfile.chargingSchedule.limitAtSoc.limit 6 * <limit multiplier> Note: Check [csKSmartChargingChargingProfileLimits] for <limit multiplier></p> |
| <p>Manual Action: Use EV to send out a SoC value less than <Configured limitAtSocSoc></p> | |
| <p>9. The Charging Station responds with a GetCompositeScheduleResponse</p> | <p>8. The Test System sends a GetCompositeScheduleRequest with evseld <Configured evseld> duration is 900 chargingRateUnit <Configured chargingRateUnit></p> |

Tool validations

...

* Step 7:
Message: **GetCompositeScheduleResponse** **SetChargingProfileResponse**
- **status** must be Accepted
- ~~**schedule.chargingRateUnit** must be <Configured chargingRateUnit>~~
- ~~**schedule.chargingSchedulePeriod[0].startPeriod** must be 0~~
- ~~**schedule.chargingSchedulePeriod[0].limit** must be 6 * <limit multiplier>~~
Note: Check [\[csKSmartChargingChargingProfileLimits\]](#) for <limit multiplier>

* Step 9:
Message: **GetCompositeScheduleResponse**
- **status** must be Accepted
- **schedule.chargingRateUnit** must be <Configured chargingRateUnit>
- **schedule.chargingSchedulePeriod[0].startPeriod** must be 0
- **schedule.chargingSchedulePeriod[0].limit** must be 8 * **6** * <limit multiplier>

6.3. CSMS

6.3.1. Page 877/878 - (2026-02) - TC_Q_130_CS - BPT manual actions updated

The AC and DC BPT parameters were removed from the initial manual action because they are no longer necessary. Instead, a single BPT flag is sufficient, as the AC/DC configuration is determined by the vehicle. The manual action after renegotiation was also removed because this step is not truly a manual action. It represents a fallback to the standard operational mode rather than an explicit user intervention.

| Main (Test scenario) | |
|---|---|
| Charging Station | CSMS |
| Agree on energy transfer mode | |
| <u>Manual Action:</u> Use EV to communicate EV charging needs: <u>For AC charging station:</u> requestedEnergyTransfer AC_BPT availableEnergyTransfer [AC_single_phase, AC_two_phase, AC_three_phase, AC_BPT, AC_BPT_DER, AC_DER] <u>For DC charging station:</u> requestedEnergyTransfer DC_BPT availableEnergyTransfer [DC, DC_BPT, DC_ACDP, DC_ACDP_BPT] BPT true controlMode ScheduledControl maxChargePower 10000 (W) maxDischargePower 5000 (W) | |
| 1. The Charging Station sends a NotifyEVChargingNeedsRequest | 2. The Test System responds with a NotifyEVChargingNeedsResponse with - status <i>Rejected</i> |
| Renegotiate | |
| <u>Manual Action:</u> Use EV to communicate EV charging needs: <u>For AC charging station:</u> requestedEnergyTransfer AC_two_phase availableEnergyTransfer [AC_single_phase, AC_two_phase, AC_three_phase, AC_BPT, AC_BPT_DER, AC_DER] <u>For DC charging station:</u> requestedEnergyTransfer DC availableEnergyTransfer [DC, DC_BPT, DC_ACDP, DC_ACDP_BPT] controlMode ScheduledControl maxChargePower 10000 (W) | |
| 3. The Charging Station sends a NotifyEVChargingNeedsRequest | 4. The Test System responds with a NotifyEVChargingNeedsResponse with - status <i>NoChargingProfile</i> |

6.3.2. Page 944 - (2026-02) - Reusable state Iso1511820V2xControlBpt - BPT manual actions updated

The AC and DC BPT parameters were removed from the initial manual action because they are no longer necessary. Instead, a single BPT flag is sufficient, as the AC/DC configuration is determined by the vehicle.

Iso1511820V2xControlBpt

| | |
|-------------------|-------------------------|
| State | Iso1511820V2xControlBpt |
| System under test | Charging Station |
| ... | |

| | |
|---|------|
| Main (Test scenario) | |
| Charging Station | CSMS |
| Agree on energy transfer mode | |
| <u>Manual Action:</u> Use EV to communicate EV charging limits: | |
| For AC charging station: requestedEnergyTransfer AC_BPT availableEnergyTransfer [AC_single_phase, AC_two_phase, AC_three_phase, AC_BPT, AC_BPT_DER, AC_DER] | |
| For DC charging station: requestedEnergyTransfer DC_BPT availableEnergyTransfer [DC, DC_BPT, DC_ACDP, DC_ACDP_BPT] | |
| BPT true | |
| controlMode DynamicControl or ScheduledControl | |
| maxChargePower 10000 (W) | |
| maxDischargePower 5000W (W) | |

6.3.3. Page 1100/1101 - (2026-02) - TC_E_117_CSMS - Updated prerequisites and SetChargingProfileRequest tool validations

The configuration *SmartChargingCtrlr.ChargingProfilePersistence* is *<absent>* was moved to Prerequisites and SetChargingProfileRequest tool validations were updated.

| | |
|-----------------|---|
| Test case name | Set Charging Profile - Resuming transaction after interruption - TxResumptionTimeout not expired - TxAllowEnergyTransferResumption is true |
| Test case Id | TC_E_117_CSMS |
| ... | |
| Prerequisite(s) | SmartChargingCtrlr.ChargingProfilePersistence is <i><absent></i> TxCtrlr.TxResumptionTimeout is 999 TxCtrlr.TxAllowEnergyTransferResumption is true |

| | |
|---|--|
| Before (Preparations) | |
| Configuration State: SmartChargingCtrlr.ChargingProfilePersistence is <i><absent></i> N/a | |
| ... | |

| | |
|--|---|
| Main (Test scenario) | |
| Charging Station | CSMS |
| ... | |
| 7. The Test System sends a SecurityEventNotificationRequest - type must be StartupOfTheDevice OR ResetOrReboot | 8. The CSMS responds with a SecurityEventNotificationResponse |
| ... | |

| Tool validations |
|---|
| ... |
| * Step 15: |
| Message: SetChargingProfileRequest must contain an identical <i>chargingProfile</i> as in Step 1 or identical as of time of Step 15. |
| Message: SetChargingProfileRequest |
| - chargingProfile.chargingProfilePurpose must be <i>TxProfile</i> |

6.3.4. Page 1006 - (2026-02) - TC_B_105_CSMS - Manual action added

The note before step 1. has been changed to indicate a manual action is required.

| Main (Test scenario) | |
|--|--|
| Charging Station | CSMS |
| ... | |
| Note: Request CSMS to set a network configuration that includes APN connection details, but no VPN details. | |
| Manual action: Request CSMS to set a network configuration that includes APN connection details, but no VPN details. | |
| 2. The Charging Station Test system responds with SetVariablesResponse(s) with - setVariableResult.attributeStatus = <i>Accepted</i> for each variable | 1. CSMS sends a SetVariablesRequest on component NetworkConfiguration[<Configured non-active configurationSlot>] |

6.3.5. Page 1002 - (2026-02) - TC_B_100_CSMS - Manual action added and tool validations updated

The note was replaced with a manual action and tool validations were updated.

| Main (Test scenario) | |
|---|------|
| Charging Station | CSMS |
| Note: Request CSMS to send a network profile including identity and password. | |
| Manual Action: Request CSMS to send a network profile including identity and password. | |

| Tool validations |
|---|
| * Step 1: |
| Message SetNetworkProfileRequest |
| - configurationSlot is <i><Configured configurationSlot></i> |
| - connectionData.messageTimeout <i><Configured messageTimeout></i> |
| - connectionData.ocppCsmsUrl <i><Configured ocppCsmsUrl></i> |
| - connectionData.ocppInterface <i><Configured ocppInterface></i> |
| - connectionData.ocppTransport <i>JSON</i> |
| - connectionData.ocppVersion OCPP20 OCPP21 |
| - connectionData.securityProfile <Configured securityProfile> <Active securityProfile> |
| - connectionData.identity <i><Configured identity></i> |
| - connectionData.basicAuthPassword <i><Configured basicAuthPassword></i> |

6.3.6. Page 1007/1008 - (2026-02) - TC_B_116_CSMS -

Added SecurityEventNotificationRequest steps and updated tool validations.

| Test case name | Reset ImmediateAndResume - With Ongoing Transaction and SmartCharging - resuming energytransfer |
|----------------|---|
| Test case Id | TC_B_116_CSMS |
| ... | |
| Description | This test case covers how the CSMS can remotely request the Charging Station to reset itself by sending a ResetRequest during a transaction. When ResetRequest " Immediate " ImmediateAndResume is sent the charging stations will try to stop all transactions before rebooting. |

| Main (Test scenario) | |
|--|---|
| Charging Station | CSMS |
| ... | |
| <p>9. The Test System notifies the CSMS about the current state of all connectors.</p> <p>For <Configured connectorId>:</p> <p>Message: StatusNotificationRequest</p> <p>- connectorStatus Occupied</p> <p>Message: NotifyEventRequest</p> <p>- trigger Delta</p> <p>- actualValue "Occupied"</p> <p>- component.name "Connector"</p> <p>- variable.name "AvailabilityState"</p> <p>For <Other connector(s)>:</p> <p>Message: StatusNotificationRequest</p> <p>- connectorStatus Available</p> <p>Message: NotifyEventRequest</p> <p>- trigger Delta</p> <p>- actualValue "Available"</p> <p>- component.name "Connector"</p> <p>- variable.name "AvailabilityState"</p> | <p>10. The CSMS responds accordingly.</p> |
| <p>11. The Test System sends a SecurityEventNotificationRequest with</p> <p>- type ResetOrReboot</p> | <p>12. The CSMS responds with a SecurityEventNotificationResponse</p> |
| <p>14. 13. The Test System sends a TransactionEventRequest.</p> <p>- eventType Updated</p> <p>- triggerReason TxResumed</p> <p>- idToken is omitted</p> | <p>12. 14. The CSMS responds with a TransactionEventResponse.</p> |
| <p>14. 16. The Test System responds with a SetChargingProfileResponse with status Accepted</p> | <p>13. 15. The CSMS sends a SetChargingProfileRequest</p> |

| Tool validations |
|---|
| <p>* Step 1:</p> <p>... * Step 13 15:</p> <p>Message: SetChargingProfileRequest must either contain an identical <i>chargingProfile</i> as in Step 1 or identical from the time of step 11 onwards.</p> <p>Message: SetChargingProfileRequest</p> <p>- chargingProfile.chargingProfilePurpose TxProfile</p> |

6.3.7. Page 1038 - (2026-02) - TC_C_119_CSMS / TC_C_120_CSMS / TC_C_125_CSMS / TC_C_126_CSMS - Added missing triggerReason and stoppedReason

| Test case Id | TC_C_119_CSMS / TC_C_120_CSMS / TC_C_125_CSMS / TC_C_126_CSMS |
|----------------------|---|
| ... | |
| Main (Test scenario) | |
| Charging Station | CSMS |
| ... | |

| Main (Test scenario) | |
|--|--|
| X. The Test System sends a TransactionEventRequest with eventType <i>Ended</i> idToken.type <i>DirectPayment</i> ... transactionInfo.stoppedReason <i>Local</i> triggerReason <i>StopAuthorized</i> | 4. The CSMS responds with a TransactionEventResponse |

6.3.8. Page 1046/1047 - (2026-02) - TC_C_131_CSMS - Use idToken from the RequestStartTransactionRequest, which contains the PspRef

| | |
|----------------|--|
| Test case name | Ad hoc payment via static or dynamic QR code - success |
| Test case Id | TC_C_131_CSMS |
| ... | |

| Main (Test scenario) | |
|--|--|
| Charging Station | CSMS |
| ... | |
| 3. The Test System sends a TransactionEventRequest with eventType <i>Started</i> triggerReason <i>RemoteStart</i> idToken.idToken <PspRef> <i><idToken.idToken from step 1></i> idToken.idToken idToken.type <i>DirectPayment</i> transactionInfo.transactionId <i><transactionId></i> transactionInfo.remoteStartId <i><remoteStartId></i> meterValue[0].timestamp <i><not omitted></i> meterValue[0].sampledValue[0].value <i>10000</i> meterValue[0].sampledValue[0].context <i>Transaction.Begin</i> ... | 4. The CSMS responds with a TransactionEventResponse |

| Tool validations |
|---|
| * Step 1: Message RequestStartTransactionRequest idToken.idToken must be <PspRef> NOT be omitted ... |

6.3.9. Page 1046/1048/1049 - (2026-02) - TC_C_131_CSMS/TC_C_132_CSMS/TC_C_133_CSMS - Sharedsecret configuration variable added

The hardcoded value used for WebPaymentsCtrlr.SharedSecret ("mysharedsecret") has been replaced with a configurable variable *<Configured sharedsecret>*.

6.3.10. Page 1094/1095 - (2026-02) - TC_E_110_CSMS - Added missing Authorization request to initiate transaction

An explicit authorization request was introduced for improved clarity, and the configured energy limit was standardized to a fixed value.

| | |
|----------------|--|
| Test case name | Transactions with fixed cost, energy or time - CSMS specifies energy limit |
| Test case Id | TC_E_110_CSMS |
| ... | |

| Main (Test scenario) | |
|---|--|
| Charging Station | CSMS |
| 1. The Test System sends an AuthorizeRequest With idToken.idToken <Configured valid_idtoken_idtoken> idToken.type <Configured valid_idtoken_type> | 2. The CSMS responds with an AuthorizeResponse |
| Manual action: In CSMS, configure energy limit of 10000 (Wh) for this transaction | |
| 1. 3. The Test System sends a TransactionEventRequest with With eventType is Started triggerReason is ChargingStateChanged idToken.idToken <Configured valid_idtoken_idtoken> idToken.type <Configured valid_idtoken_type> evse.id is <Configured evseld> evse.connectorId is <Configured connectorId> transactionInfo.transactionId is <transactionId> transactionInfo.chargingState is Charging transactionInfo.transactionLimit <omitted> | 2. 4. The CSMS responds with a TransactionEventResponse |
| 3. 5. The Test System sends a TransactionEventRequest with triggerReason is LimitSet transactionInfo.transactionLimit.maxEnergy is <Configured energy limit> 10000 | 4. 6. The CSMS responds with TransactionEventResponse |
| 5. 7. The Test System sends a TransactionEventRequest with eventType is Updated triggerReason is EnergyLimitReached evse.id is <Configured evseld> evse.connectorId is <Configured connectorId> transactionInfo.transactionId is <transactionId> transactionInfo.transactionLimit.maxEnergy <Configured energy limit> 10000 transactionInfo.transactionLimit.maxTime <omitted> transactionInfo.transactionLimit.maxCost <omitted> transactionInfo.chargingState SuspendedEVSE | 6. 8. The CSMS responds with a TransactionEventResponse |

| Tool validations |
|--|
| * Step 2 4 : Message: TransactionEventResponse idTokenInfo.status must be Accepted transactionLimit.maxEnergy must be <Configured energy limit> 10000 transactionLimit.maxTime must be <omitted> transactionLimit.maxCost must be <omitted> |
| * Step 4 6 : Message: TransactionEventResponse transactionLimit must be <omitted> |
| Post scenario validations: N/a |

6.3.11. Page 1096/1097 - (2026-02) - TC_E_111_CSMS - Added missing Authorization request to initiate transaction

An explicit authorization request was introduced for improved clarity, and the configured time limit was standardized to a fixed value.

| | |
|----------------|--|
| Test case name | Transactions with fixed cost, energy or time - CSMS specifies time limit |
| Test case Id | TC_E_111_CSMS |
| ... | |

| Main (Test scenario) | |
|---|--|
| Charging Station | CSMS |
| 1. The Test System sends an AuthorizeRequest With idToken.idToken <Configured valid_idtoken_idtoken> idToken.type <Configured valid_idtoken_type> | 2. The CSMS responds with an AuthorizeResponse |
| Manual action: In CSMS, configure time limit of duration <Configured time limit> 120 for this transaction | |
| 1. 3. The Test System sends a TransactionEventRequest with With eventType is Started triggerReason is ChargingStateChanged idToken.idToken <Configured valid_idtoken_idtoken> idToken.type <Configured valid_idtoken_type> evse.id is <Configured evseld> evse.connectorId is <Configured connectorId> transactionInfo.transactionId is <transactionId> transactionInfo.chargingState is Charging transactionInfo.transactionLimit <omitted> | 2. 4. The CSMS responds with a TransactionEventResponse |
| 3. 5. The Test System sends a TransactionEventRequest with eventType is Updated triggerReason is LimitSet evse.id is <Configured evseld> evse.connectorId is <Configured connectorId> transactionInfo.transactionId is <transactionId> transactionInfo.transactionLimit.maxEnergy <omitted> transactionInfo.transactionLimit.maxTime <Configured time limit> 120 transactionInfo.transactionLimit.maxCost <omitted> | 4. 6. The CSMS responds with a TransactionEventResponse |

| Tool validations |
|--|
| * Step 2 4 : Message: TransactionEventResponse idTokenInfo.status must be Accepted transactionLimit.maxEnergy must be <omitted> transactionLimit.maxTime must be <Configured time limit> 120 transactionLimit.maxCost must be <omitted> * Step 4 6 : Message: TransactionEventResponse transactionLimit must be <omitted> |
| Post scenario validations: N/a |

6.3.12. Page 1333 - (2026-02) - TC_O_101_CSMS - Updated tool validations

| |
|---|
| Tool validations |
| <p>* Step 1:</p> <p>Message SetDisplayMessageRequest</p> <ul style="list-style-type: none"> - message.id <Generated Id> - message.priority <Configured Priority> - message.message.language <Not omitted default language> <Not omitted> - message.message.content <Not omitted default language content> - message.messageExtra[0].language <Not omitted other language> <Different from message.language> - message.messageExtra[0].content <Not omitted other language content> |

6.3.13. Page 1210 - (2026-02) - TC_K_109_CSMS - Additional test case steps added

The main test scenario was updated to include an initial SetVariablesRequest for MaxExternalConstraintsId to ensure the CSMS is accurately tested for updating the chargingProfileId.

| | |
|-----------------------|--|
| Test case name | EMS Control - Set Charging Profile - MaxExternalConstraintsId |
| Test case Id | TC_K_109_CSMS |
| ... | |

| Main (Test scenario) | |
|---|---|
| Charging Station | CSMS |
| 2. The Test System responds with a GetBaseReportResponse with status <i>Accepted</i> | 1. The CSMS sends a GetBaseReportRequest |
| 3. The Test System sends a NotifyReportRequest containing requestId <requestId> reportData[0].component.name <i>SmartChargingCtrlr</i> reportData[0].variable.name <i>MaxExternalConstraintsId</i> reportData[0].variableAttribute.value <i>2147400000</i> | 4. The CSMS responds with a NotifyReportResponse |
| Manual Action : Configure variable MaxExternalConstraintsId on the CSMS | |
| 2. The Test System responds with SetVariablesResponse | 1. The CSMS sends SetVariablesRequest with: - variable.name <i>MaxExternalConstraintsId</i> - component.name <i>SmartChargingCtrlr</i> - attributeValue <i>10</i> |
| Manual Action : Request the CSMS to send a TxDefaultProfile Charging Profile | |
| 6- 4. The Test System responds with a SetChargingProfileResponse with status <i>Accepted</i> | 5- 3. The CSMS sends a SetChargingProfileRequest |
| Manual Action : Request the CSMS to clear the charging profile with <chargingProfileId from step 3> | |
| 6. The Test System responds with a ClearChargingProfileResponse with status <i>Accepted</i> | 5. The CSMS sends a ClearChargingProfileRequest with chargingProfileId <chargingProfileId from step 3> AND chargingProfileCriteria <i>omit</i> |
| Manual Action : Configure variable MaxExternalConstraintsId on the CSMS | |
| 8. The Test System responds with SetVariablesResponse | 7. The CSMS sends SetVariablesRequest with: - variable.name <i>MaxExternalConstraintsId</i> - component.name <i>SmartChargingCtrlr</i> - attributeValue <i>2147400000</i> |
| Manual Action : Request the CSMS to send a TxDefaultProfile Charging Profile | |

| Main (Test scenario) | |
|---|--|
| 10. The Test System responds with a SetChargingProfileResponse with status <i>Accepted</i> | 9. The CSMS sends a SetChargingProfileRequest |

| Tool validations |
|--|
| * Step 3: Message SetChargingProfileRequest chargingProfile.id must be greater than 10 |
| * Step 5: Message ClearChargingProfileRequest chargingProfile.id must be <chargingProfileId from step 1> |
| * Step 9: Message SetChargingProfileRequest chargingProfile.id must be greater than 2147400000 |
| Post scenario validations: - N/a |

6.3.14. Page 1304-1306 - (2026-02) - TC_N_102_CSMS/TC_N_103_CSMS - added without userinfo

The first attempt needs to be without to check it is not accepted.

| Test case Id | TC_N_102_CSMS / TC_N_103_CSMS |
|--------------|-------------------------------|
| ... | |

| Main (Test scenario) | |
|--|---------------------------------|
| Charging Station | CSMS |
| ... | |
| 3. The Test System uploads log file to <GetLogRequest.log.remoteLocation of step 1 <i>without userinfo</i> > using HTTP POST | 4. The CSMS responds using HTTP |
| ... | |

6.3.15. Page 1336 - (2026-02) - TC_Q_102_CSMS - Test case removed

This testcases has been removed, because as a CSMS cannot be forced to omit the energyModes. In addition, there is also no added benefit to test this.

6.3.16. Page 1309 - (2026-02) - TC_N_105_CSMS - Install usable monitor and send a NotifyPeriodicEventStream

| Test case name | Set Variable Monitoring - Set Frequent Periodic Variable Monitoring - Periodic |
|----------------|--|
| Test case Id | TC_N_105_CSMS |
| ... | |

| Before (Preparations) |
|---|
| Configuration State: CSMS must be configured to accept opening the periodic event stream. N/a |
| Memory State: N/a |

| | |
|---|---|
| Before (Preparations) | |
| Reusable State: N/a | |
| Main (Test scenario) | |
| Charging Station | CSMS |
| Manual Action: Request CSMS to install a monitor on: component.name EVSE EVSE.id <Configured evseld> variable.name Power type Periodic severity 8 value 5 periodicEventStream.interval 5 periodicEventStream.values 10 | |
| 2. Test System responds with: Message: SetVariableMonitoringResponse with setMonitoringResult[0].status = Accepted | 1. CSMS sends a SetVariableMonitoringRequest |
| 1. 3. Test System sends a OpenPeriodicEventStreamRequest with constantStreamData.id 2 constantStreamData.variableMonitoringId 3 <monitor id from step 1> constantStreamData.params.interval 40 5 constantStreamData.params.values 30 10 | 2. 4. CSMS responds with a OpenPeriodicEventStreamResponse |
| Note: The Test System waits 5 seconds. | |
| 5. Test System sends a NotifyPeriodicEventStream using RFC framework SEND | |
| Manual Action: Request the CSMS to reconfigure the periodic event stream to an interval of 15s and values 45 | |
| 4. 7. Test System responds with a AdjustPeriodicEventStreamResponse with status Accepted | 3. 6. CSMS sends a AdjustPeriodicEventStreamRequest |
| Note: The Test System waits 10 seconds. | |
| 5. 8. Test System sends a NotifyPeriodicEventStream using RFC framework SEND | |
| 6. 9. Test System sends a ClosePeriodicEventStreamRequest with constantStreamData.id 2 | 7. 10. CSMS responds with a ClosePeriodicEventStreamResponse |
| Note: The Test System waits 10 seconds, before ending the test case. | |

| |
|--|
| Tool validations |
| <p>* Step 1:</p> <p>Message SetVariableMonitoringRequest with:</p> <ul style="list-style-type: none"> - setMonitoringData[0].type = <i>Periodic</i>, - setMonitoringData[0].severity = 8, - setMonitoringData[0].component.name = "EVSE" - setMonitoringData[0].component.evse.id = <Configured evseld> - setMonitoringData[0].variable.name = <i>Power</i> - setMonitoringData[0].value = 5 - setMonitoringData[0].periodicEventStream.interval 5 - setMonitoringData[0].periodicEventStream.values 10 <p>* Step 2: Step 4:</p> <p>Message OpenPeriodicEventStreamResponse</p> <ul style="list-style-type: none"> - status must be <i>Accepted</i> <p>* Step 3: Step 6:</p> <p>Message AdjustPeriodicEventStreamRequest</p> <p>id must be 2</p> <p>params.interval must be 45 10</p> <p>params.values must be 45 20</p> |

6.3.17. Page 1339/1340 - (2026-02) - TC_Q_107_CSMS - Test case updated

Test case updated to reflect current use cases and functional requirements.

| | |
|-----------------------|--|
| Test case name | V2X Authorisation - ISO15118-20 - Charging only (V2X control) before starting V2X |
| Test case Id | TC_Q_107_CSMS |
| ... | |

| |
|--|
| Before (Preparations) |
| <p>Configuration State:</p> <ul style="list-style-type: none"> - CSMS is configured to start transactions first in a non-V2X mode before upgrading to V2X <p>N/a</p> |
| <p>Memory State:</p> <p>N/a</p> |
| <p>Reusable State(s):</p> <p>State is ISO15118-20 transaction just started exposing:</p> <ul style="list-style-type: none"> - <allowedEnergyTransferModes> - <transactionId> |

| | |
|--|---|
| Main (Test scenario) | |
| Charging Station | CSMS |
| Agree on energy transfer mode | |
| <p>1. The Test System sends a NotifyEVChargingNeedsRequest with</p> <p>evseld <Configured evseld></p> <p>chargingNeeds.requestedEnergyTransfer one of non-bidirectional mode in <allowedEnergyTransferModes> received in AuthorizeResponse or if omitted <i>AC_three_phase</i></p> <p>chargingNeeds.availableEnergyTransfer [AC_single_phase, AC_two_phase, AC_three_phase, AC_BPT, AC_BPT_DER, AC_DER]</p> <p>chargingNeeds.controlMode <i>ScheduledControl</i></p> <p>chargingNeeds.v2xChargingParameters.maxChargePower 1234W</p> <p>chargingNeeds.v2xChargingParameters.maxDischargePower 1234W</p> | <p>2. The CSMS responds with a NotifyEVChargingNeedsResponse</p> |

| | |
|---|--|
| Main (Test scenario) | |
| Setting charging profile | |
| 4. The Test System responds with a SetChargingProfileResponse with status <i>Accepted</i> | 3. The CSMS sends a SetChargingProfileRequest |
| <u>Manual Action:</u> <i>Trigger CSMS to allow V2X after initial start</i> | |
| 6. The Test System sends a NotifyAllowedEnergyTransferResponse with status <i>Accepted</i> | 5. The CSMS sends a NotifyAllowedEnergyTransferRequest |
| 7. The Test System sends a NotifyEVChargingNeedsRequest with evseld <i><Configured evseld></i> chargingNeeds.requestedEnergyTransfer one of <i>bidirectional</i> mode in <i><allowedEnergyTransferModes></i> received in NotifyAllowedEnergyTransferRequest chargingNeeds.availableEnergyTransfer <i>[AC_single_phase, AC_two_phase, AC_three_phase, AC_BPT, AC_BPT_DER, AC_DER]</i> chargingNeeds.controlMode <i>ScheduledControl</i> chargingNeeds.v2xChargingParameters.maxChargePower <i>1234W</i> chargingNeeds.v2xChargingParameters.maxDischargePower <i>1234W</i> | 8. The CSMS responds with a NotifyEVChargingNeedsResponse |
| Setting charging profile | |
| 10. The Test System responds with a SetChargingProfileResponse with status <i>Accepted</i> | 9. The CSMS sends a SetChargingProfileRequest |
| 11. The Test System sends a TransactionEventRequest with eventType <i>Updated</i> triggerReason <i>OperationModeChanged</i> transactionInfo.transactionId <i><transactionId></i> transactionInfo.operationMode <i><Operation mode from step 9></i> | 12. The CSMS responds with a TransactionEventResponse |

| |
|--|
| Tool validations |
| <p>* Step 2: Message: NotifyEVChargingNeedsResponse - status must be <i>Accepted</i> or <i>Processing</i></p> <p>* Step 3: Message: SetChargingProfileRequest - evseld must be <i><Configured evseld></i> - chargingProfile.transactionId must be <i><transactionId></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].operationMode must be <i>ChargingOnly</i> <i><omitted></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].Limit must NOT be <i><omitted></i> <i><empty></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].dischargeLimit must be <i><omitted></i> <i><empty></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].dischargeLimit_L2 must be <i><omitted></i> <i><empty></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].dischargeLimit_L3 must be <i><omitted></i> <i><empty></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].setpoint must be <i><omitted></i> <i><empty></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].setpoint_L2 must be <i><omitted></i> <i><empty></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].setpoint_L3 must be <i><omitted></i> <i><empty></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].setPointReactive must be <i><omitted></i> <i><empty></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].setPointReactive_L2 must be <i><omitted></i> <i><empty></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].setPointReactive_L3 must be <i><omitted></i> <i><empty></i></p> <p>* Step 5: Message: NotifyAllowedEnergyTransferRequest - transactionId must be <i><transactionId></i> - allowedEnergyTransfer must contain one of <i>[DC_BPT, AC_BPT, AC_BPT_DER]</i></p> <p>* Step 7: Message: NotifyEVChargingNeedsResponse - status must be <i>Accepted</i> or <i>Processing</i></p> <p>* Step 9: Message: SetChargingProfileRequest - evseld must be <i><Configured evseld></i> - chargingProfile.transactionId must be <i><transactionId></i> - chargingProfile.chargingSchedule[*].chargingSchedulePeriod[*].operationMode must NOT be <i>ChargingOnly</i> <i><empty></i></p> |
| <p>Post scenario validations: N/a</p> |

6.3.18. Page 1359 - (2026-02) - TC_R_107_CSMS - Removed NotifyDERStartStopRequest and added ReportDERControlRequest

| | |
|-----------------------|--------------------------------------|
| Test case name | Configure DER control settings at CS |
| Test case Id | TC_R_107_CSMS |
| ... | |

| | |
|---|--|
| Main (Test scenario) | |
| Charging Station | CSMS |
| ... | |
| <u>Manual action:</u> trigger CSMS to send a GetDERControlRequest with controlType VoltVar | |
| 20. The Test System responds with a GetDERControlResponse with status NotFound | 19. The CSMS sends a GetDERControlRequest |
| <u>Manual action:</u> trigger CSMS to send a GetDERControlRequest with controlId from step 7 | |
| 22. The Test System responds with a GetDERControlResponse with status Accepted | 21. The CSMS sends a GetDERControlRequest |

| | |
|--|---|
| Main (Test scenario) | |
| <p>23. The Test System sends a NotifyDERStartStopRequest with controlId <SetDERControlRequest.controlId of step 11> started = true timestamp <Current date/time> supersededId <SetDERControlRequest.controlId of step 9></p> | 24. The CSMS responds with a NotifyDERStartStopResponse |
| <p>23. The Test System sends a ReportDERControlRequest with</p> <ul style="list-style-type: none"> - curve : - curve.id = "freqwatt_1" - curve.curveType = "FreqWatt" - curve.isDefault = false - curve.isSuperseded = false - curve.curve.priority = 4 - curve.curve.yUnit = "PctMaxW" - curve.curve.curvedata[0].x = 49 - curve.curve.curvedata[0].y = 75 - curve.curve.curvedata[1].x = 49.5 - curve.curve.curvedata[1].y = 90 - curve.curve.curvedata[2].x = 50.5 - curve.curve.curvedata[2].y = 100 - curve.curve.curvedata[3].x = 51 - curve.curve.curvedata[3].y = 100 - curve.curve.startTime = <current time> - curve.curve.duration = 900 | 24. The CSMS sends a ReportDERControlResponse |

| |
|--|
| Tool validations |
| <p>...</p> <p>* Step 21:</p> <p>Message: GetDERControlRequest</p> <p>- controlId must be <controlId from step 7></p> |
| <p>Post scenario validations:</p> <p>N/a</p> |

6.3.19. Page 1365 - 1367 - (2026-02) - TC_S_103_CSMS - Test case updated

| | |
|------------------------|--|
| Test case name | Battery Swap - Remote Start - enough batteries available |
| Test case Id | TC_S_103_CSMS |
| Prerequisite(s) | <p>Charging Station supports battery swapping.</p> <p>There are enough batteries available for swapping.</p> <p>BatterySwapCtrlr.Idtoken is <not set></p> |

| |
|---|
| Before (Preparations) |
| <p>Configuration State:</p> <p>BatterySwapCtrlr.Idtoken is <not set></p> <p>N/a</p> |
| <p>Memory State:</p> <p>N/a</p> |
| <p>Reusable State(s):</p> <p>N/a</p> |

| | |
|-----------------------------|-------------|
| Main (Test scenario) | |
| Charging Station | CSMS |

| | |
|--|---|
| Main (Test scenario) | |
| <u>Manual Action:</u> Let CSMS trigger a request for swapping batteries | |
| 2. The Test System responds with a RequestBatterySwapResponse with status <i>Accepted</i> | 1. The CSMS sends a RequestBatterySwapRequest |
| <u>Note:</u> Set of two (virtual) batteries are inserted at this point in scenario. | |
| 3. The Test System notifies the CSMS about the status change of the slot. connectorStatus <i>Occupied</i> | 4. The CSMS responds accordingly. |
| 5. The Test System sends a TransactionEventRequest with eventType <i>Started</i> triggerReason <i>CablePluggedIn</i> idToken.idToken "" idToken.type <i>NoAuthorization</i> evse <Configured evseld> <id> evse.connectorId 1 transactionInfo.transactionId 111-222-333-444-3 <transactionId> transactionInfo.chargingState <i>EVConnected</i> | 6. The CSMS responds with a TransactionEventResponse |
| 7. The Test System notifies the CSMS about the status change of the slot. | 8. The CSMS responds accordingly. |
| 9. The Test System sends a TransactionEventRequest with eventType <i>Started</i> triggerReason <i>CablePluggedIn</i> idToken.idToken "" idToken.type <i>NoAuthorization</i> evse <Configured evseld2> evse.connectorId 1 transactionInfo.transactionId 111-222-333-444-4 transactionInfo.chargingState <i>EVConnected</i> | 10. The CSMS responds with a TransactionEventResponse |
| <u>Note:</u> Steps 3 through 6 are repeated for each battery inserted | |
| 11. 7. The Test System sends a BatterySwapRequest with eventType <i>BatteryIn</i> requestId <requestId> idToken.idToken <Configured valid_idtoken_idtoken> batteryData[0].evseld <Configured evseld> 1 batteryData[0].serialNumber 1234 batteryData[0].soC 23 batteryData[0].soH 85 batteryData[1].evseld <Configured evseld2> 2 batteryData[1].serialNumber 5678 batteryData[1].soC 45 batteryData[1].soH 87 | 12. 8. The CSMS responds with a BatterySwapResponse |
| <u>Note:</u> Set of two batteries are extracted at this point in scenario. | |
| 13. The Charging Station sends a TransactionEventRequest with eventType <i>Ended</i> triggerReason <i>EnergyLimitReached</i> idToken.idToken "" idToken.type <i>NoAuthorization</i> transactionInfo.transactionId 111-222-333-444-1 transactionInfo.chargingState <i>Idle</i> transactionInfo.stoppedReason <i>EVDisconnected</i> | 14. The Test System responds with a TransactionEventResponse |

| Main (Test scenario) | |
|--|--|
| <p>15. 9. The Test System notifies the CSMS about the status change of the slot. connectorStatus <i>Available</i></p> | <p>16. 10. The CSMS responds accordingly.</p> |
| <p>17. 11. The Charging Station sends a TransactionEventRequest with eventType <i>Ended</i> triggerReason <i>EnergyLimitReached</i> EVCommunicationLost idToken.idToken "" idToken.type <i>NoAuthorization</i> transactionInfo.transactionId <i>111-222-333-444-2</i> <transactionId> transactionInfo.chargingState <i>Idle</i> transactionInfo.stoppedReason <i>EVDisconnected</i></p> | <p>18. 12. The Test System responds with a TransactionEventResponse</p> |
| <p>19. The Test System notifies the CSMS about the status change of the slot.</p> | <p>20. The CSMS responds accordingly.</p> |
| <p>Note: Steps 9 through 12 are repeated for each battery taken out</p> | |
| <p>21. 13. The Test System sends a BatterySwapRequest with eventType <i>BatteryOut</i> requestId <i><requestId></i> idToken.idToken <i><Configured valid_idtoken_idtoken></i> batteryData[0].evseld <i><Configured evseld3></i> 3 batteryData[0].serialNumber <i>4321</i> batteryData[0].soC <i>80</i> batteryData[0].soH <i>95</i> batteryData[1].evseld <i><Configured evseld4></i> 4 batteryData[1].serialNumber <i>8765</i> batteryData[1].soC <i>85</i> batteryData[1].soH <i>78</i></p> | <p>22. 14. The CSMS responds with a BatterySwapResponse</p> |
| <p>Note: Steps 13 and 14 are repeated for each battery taken out</p> | |

| Tool validations |
|---|
| <p>* Step 1: Message: RequestBatterySwapResponse RequestBatterySwapRequest - requestId must be <i><not omitted></i> - idToken.idToken must be <i><Configured valid_idtoken_idtoken></i></p> <p>* Step 6: Message: TransactionEventResponse - idTokenInfo.status must be <i>Accepted</i></p> <p>* Step 10: Message: TransactionEventResponse - idTokenInfo.status must be <i>Accepted</i></p> <p>* Step 12: Message: BatterySwapResponse</p> <p>* Step 14: Step 12: Message: TransactionEventResponse - idTokenInfo.status must be <i>Accepted</i></p> <p>* Step 18: Message: TransactionEventResponse - idTokenInfo.status must be <i>Accepted</i></p> <p>* Step 22: Message: BatterySwapResponse</p> |