Messages, Datatypes & Enumerations

1. Messages

1.1. Authorize

1.1.1. AuthorizeRequest

This contains the field definition of the AuthorizeRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
certificate	string[0..5500]	0..1	Optional. The X.509 certificated presented by EV and encoded in PEM format.
idToken	IdTokenType	1..1	Required. This contains the identifier that needs to be authorized.
iso15118CertificateHashData	OCSPRequestDataType	0..4	Optional. Contains the information needed to verify the EV Contract Certificate via OCSP.

1.1.2. AuthorizeResponse

This contains the field definition of the AuthorizeResponse PDU sent by the CSMS to the Charging Station in response to an AuthorizeRequest.

Class

Field Name	Field Type	Card.	Description
certificateStatus	AuthorizeCertificateStatusEnumType	0..1	Optional. Certificate status information. - if all certificates are valid: return 'Accepted'. - if one of the certificates was revoked, return 'CertificateRevoked'.
idTokenInfo	IdTokenInfoType	1..1	Required. This contains information about authorization status, expiry and group id.

1.2. BootNotification

1.2.1. BootNotificationRequest

This contains the field definition of the BootNotificationRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
reason	BootReasonEnumType	1..1	Required. This contains the reason for sending this message to the CSMS.
chargingStation	ChargingStationType	1..1	Required. Identifies the Charging Station

1.2.2. BootNotificationResponse

This contains the field definition of the BootNotificationResponse PDU sent by the CSMS to the Charging Station in response to a BootNotificationRequest.

Class

Field Name	Field Type	Card.	Description
currentTime	dateTime	1..1	Required. This contains the CSMS's current time.

Field Name	Field Type	Card.	Description
interval	integer	1..1	Required. When Status is Accepted, this contains the heartbeat interval in seconds. If the CSMS returns something other than Accepted, the value of the interval field indicates the minimum wait time before sending a next BootNotification request.
status	RegistrationStatusEnumType	1..1	Required. This contains whether the Charging Station has been registered within the CSMS.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.3. CancelReservation

1.3.1. CancelReservationRequest

This contains the field definition of the CancelReservationRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
reservationId	integer	1..1	Required. Id of the reservation to cancel.

1.3.2. CancelReservationResponse

This contains the field definition of the CancelReservationResponse PDU sent by the Charging Station to the CSMS in response to a CancelReservationRequest.

Class

Field Name	Field Type	Card.	Description
status	CancelReservationStatusEnumType	1..1	Required. This indicates the success or failure of the canceling of a reservation by CSMS.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.4. CertificateSigned

1.4.1. CertificateSignedRequest

This contains the field definition of the CertificateSignedRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
certificateChain	string[0..10000]	1..1	Required. The signed PEM encoded X.509 certificate. This can also contain the necessary sub CA certificates. In that case, the order of the bundle should follow the certificate chain, starting from the leaf certificate. The Configuration Variable MaxCertificateChainSize can be used to limit the maximum size of this field.
certificateType	CertificateSigningUseEnumType	0..1	Optional. Indicates the type of the signed certificate that is returned. When omitted the certificate is used for both the 15118 connection (if implemented) and the Charging Station to CSMS connection. This field is required when a typeOfCertificate was included in the SignCertificateRequest that requested this certificate to be signed AND both the 15118 connection and the Charging Station connection are implemented.

1.4.2. CertificateSignedResponse

This contains the field definition of the CertificateSignedResponse PDU sent by the Charging Station to the CSMS in response to a CertificateSignedRequest.

Class

Field Name	Field Type	Card.	Description
status	CertificateSignedStatusEnumType	1..1	Required. Returns whether certificate signing has been accepted, otherwise rejected.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.5. ChangeAvailability

1.5.1. ChangeAvailabilityRequest

This contains the field definition of the ChangeAvailabilityRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
operationalStatus	OperationalStatusEnumType	1..1	Required. This contains the type of availability change that the Charging Station should perform.
evse	EVSEType	0..1	Optional. Contains Id's to designate a specific EVSE/connector by index numbers. When omitted, the message refers to the Charging Station as a whole.

1.5.2. ChangeAvailabilityResponse

This contains the field definition of the ChangeAvailabilityResponse PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
status	ChangeAvailabilityStatusEnumType	1..1	Required. This indicates whether the Charging Station is able to perform the availability change.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.6. ClearCache

1.6.1. ClearCacheRequest

This contains the field definition of the ClearCacheRequest PDU sent by the CSMS to the Charging Station. No fields are defined.

1.6.2. ClearCacheResponse

This contains the field definition of the ClearCacheResponse PDU sent by the Charging Station to the CSMS in response to a ClearCacheRequest.

Class

Field Name	Field Type	Card.	Description
status	ClearCacheStatusEnumType	1..1	Required. Accepted if the Charging Station has executed the request, otherwise rejected.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.7. ClearChargingProfile

1.7.1. ClearChargingProfileRequest

This contains the field definition of the ClearChargingProfileRequest PDU sent by the CSMS to the Charging Station. The CSMS can use this message to clear (remove) either a specific charging profile (denoted by id) or a selection of charging profiles that match with the values of the optional evse, stackLevel and ChargingProfilePurpose fields.

Class

Field Name	Field Type	Card.	Description
chargingProfileId	integer	0..1	Optional. The Id of the charging profile to clear.
chargingProfileCriteria	ClearChargingProfileType	0..1	Optional. Specifies the charging profile.

1.7.2. ClearChargingProfileResponse

This contains the field definition of the ClearChargingProfileResponse PDU sent by the Charging Station to the CSMS in response to a ClearChargingProfileRequest.

Class

Field Name	Field Type	Card.	Description
status	ClearChargingProfileStatusEnumType	1..1	Required. Indicates if the Charging Station was able to execute the request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.8. ClearDisplayMessage

1.8.1. ClearDisplayMessageRequest

This contains the field definition of the ClearDisplayMessageRequest PDU sent by the CSMS to the Charging Station. The CSMS asks the Charging Station to clear a display message that has been configured in the Charging Station to be cleared/removed. See also O05 - Clear a Display Message.

Class

Field Name	Field Type	Card.	Description
id	integer	1..1	Required. Id of the message that SHALL be removed from the Charging Station.

1.8.2. ClearDisplayMessageResponse

This contains the field definition of the ClearDisplayMessageResponse PDU sent by the Charging Station to the CSMS in a response to a ClearDisplayMessageRequest. See also O05 - Clear a Display Message.

Class

Field Name	Field Type	Card.	Description
status	ClearMessageStatusEnumType	1..1	Required. Returns whether the Charging Station has been able to remove the message.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.9. ClearedChargingLimit

1.9.1. ClearedChargingLimitRequest

This contains the field definition of the ClearedChargingLimitRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
chargingLimitSource	ChargingLimitSourceEnumType	1..1	Required. Source of the charging limit.
evseId	integer	0..1	Optional. EVSE Identifier.

1.9.2. ClearedChargingLimitResponse

This contains the field definition of the ClearedChargingLimitResponse PDU sent by the CSMS to the Charging Station. No fields are defined.

1.10. ClearVariableMonitoring

1.10.1. ClearVariableMonitoringRequest

This contains the field definition of the ClearVariableMonitoringRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
id	integer	1..*	Required. List of the monitors to be cleared, identified by there Id.

1.10.2. ClearVariableMonitoringResponse

This contains the field definition of the ClearVariableMonitoringResponse PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
clearMonitoringResult	ClearMonitoringResultType	1..*	Required. List of result statuses per monitor.

1.11. CostUpdated

1.11.1. CostUpdatedRequest

This contains the field definition of the CostUpdatedRequest PDU sent by the CSMS to the Charging Station. With this request the CSMS can send the current cost of a transaction to a Charging Station.

Class

Field Name	Field Type	Card.	Description
totalCost	decimal	1..1	Required. Current total cost, based on the information known by the CSMS, of the transaction including taxes. In the currency configured with the configuration Variable: [Currency]
transactionId	identifierString[0..36]	1..1	Required. Transaction Id of the transaction the current cost are asked for.

1.11.2. CostUpdatedResponse

This contains the field definition of the CostUpdatedResponse PDU sent by the Charging Station to the CSMS in response to CostUpdatedRequest. No fields are defined.

1.12. CustomerInformation

This contains the field definition of the CustomerInformationRequest PDU sent by the CSMS to the Charging Station.

1.12.1. CustomerInformationRequest

Class

Field Name	Field Type	Card.	Description
requestId	integer	1..1	Required. The Id of the request.
report	boolean	1..1	Required. Flag indicating whether the Charging Station should return NotifyCustomerInformationRequest messages containing information about the customer referred to.
clear	boolean	1..1	Required. Flag indicating whether the Charging Station should clear all information about the customer referred to.
customerIdentifier	string[0..64]	0..1	Optional. A (e.g. vendor specific) identifier of the customer this request refers to. This field contains a custom identifier other than IdToken and Certificate. One of the possible identifiers (customerIdentifier, customerIdToken or customerCertificate) should be in the request message.
idToken	IdTokenType	0..1	Optional. The IdToken of the customer this request refers to. One of the possible identifiers (customerIdentifier, customerIdToken or customerCertificate) should be in the request message.
customerCertificate	CertificateHashDataType	0..1	Optional. The Certificate of the customer this request refers to. One of the possible identifiers (customerIdentifier, customerIdToken or customerCertificate) should be in the request message.

1.12.2. CustomerInformationResponse

Class

Field Name	Field Type	Card.	Description
status	CustomerInformationStatusEnumType	1..1	Required. Indicates whether the request was accepted.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.13. DataTransfer

1.13.1. DataTransferRequest

This contains the field definition of the DataTransferRequest PDU sent either by the CSMS to the Charging Station or vice versa.

Class

Field Name	Field Type	Card.	Description
messageId	string[0..50]	0..1	Optional. May be used to indicate a specific message or implementation.
data	anyType	0..1	Optional. Data without specified length or format. This needs to be decided by both parties (Open to implementation).
vendorId	string[0..255]	1..1	Required. This identifies the Vendor specific implementation

1.13.2. DataTransferResponse

This contains the field definition of the DataTransferResponse PDU sent by the Charging Station to the CSMS or vice versa in response to a DataTransferRequest.

Class

Field Name	Field Type	Card.	Description
status	DataTransferStatusEnumType	1..1	Required. This indicates the success or failure of the data transfer.
data	anyType	0..1	Optional. Data without specified length or format, in response to request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.14. DeleteCertificate

1.14.1. DeleteCertificateRequest

Used by the CSMS to request deletion of an installed certificate on a Charging Station.

Class

Field Name	Field Type	Card.	Description
certificateHashData	CertificateHashDataType	1..1	Required. Indicates the certificate of which deletion is requested.

1.14.2. DeleteCertificateResponse

Response to a DeleteCertificateRequest.

Class

Field Name	Field Type	Card.	Description
status	DeleteCertificateStatusEnumType	1..1	Required. Charging Station indicates if it can process the request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.15. FirmwareStatusNotification

1.15.1. FirmwareStatusNotificationRequest

This contains the field definition of the FirmwareStatusNotifitacionRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
status	FirmwareStatusEnumType	1..1	Required. This contains the progress status of the firmware installation.
requestId	integer	0..1	Optional. The request id that was provided in the UpdateFirmwareRequest that started this firmware update. This field is mandatory, unless the message was triggered by a TriggerMessageRequest AND there is no firmware update ongoing.

1.15.2. FirmwareStatusNotificationResponse

This contains the field definition of the FirmwareStatusNotificationResponse PDU sent by the CSMS to the Charging Station in response to a FirmwareStatusNotificationRequest. No fields are defined.

1.16. Get15118EVCertificate

1.16.1. Get15118EVCertificateRequest

This message is sent by the Charging Station to the CSMS if an ISO 15118 vehicle selects the service Certificate installation. NOTE: This message is based on CertificateInstallationReq Res from ISO 15118 2.

Class

Field Name	Field Type	Card.	Description
iso15118SchemaVersion	string[0..50]	1..1	Required. Schema version currently used for the 15118 session between EV and Charging Station. Needed for parsing of the EXI stream by the CSMS.
action	CertificateActionEnumType	1..1	Required. Defines whether certificate needs to be installed or updated.
exiRequest	string[0..5600]	1..1	Required. Raw CertificateInstallationReq request from EV, Base64 encoded.

1.16.2. Get15118EVCertificateResponse

Response message from CSMS to Charging Station containing the status and optionally new certificate. NOTE: This message is based on CertificateInstallationReq Res from ISO 15118-2.

Class

Field Name	Field Type	Card.	Description
status	Iso15118EVCertificateStatusEnumType	1..1	Required. Indicates whether the message was processed properly.
exiResponse	string[0..5600]	1..1	Required. Raw CertificateInstallationRes response for the EV, Base64 encoded.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.17. GetBaseReport

1.17.1. GetBaseReportRequest

This contains the field definition of the GetBaseReportRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
requestId	integer	1..1	Required. The Id of the request.
reportBase	ReportBaseEnumType	1..1	Required. This field specifies the report base.

1.17.2. GetBaseReportResponse

This contains the field definition of the GetBaseReportResponse PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
status	GenericDeviceModelStatusEnumType	1..1	Required. This indicates whether the Charging Station is able to accept this request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.18. GetCertificateStatus

1.18.1. GetCertificateStatusRequest

This contains the field definition of the GetCertificateStatusRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
ocspRequestData	OCSPRequestDataType	1..1	Required. Indicates the certificate of which the status is requested.

1.18.2. GetCertificateStatusResponse

This contains the field definition of the GetCertificateStatusResponse PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
status	GetCertificateStatusEnumType	1..1	Required. This indicates whether the charging station was able to retrieve the OCSP certificate status.
ocspResult	string[0..5500]	0..1	Optional. OCSPResponse class as defined in IETF RFC 6960. DER encoded (as defined in IETF RFC 6960), and then base64 encoded. MAY only be omitted when status is not Accepted.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.19. GetChargingProfiles

1.19.1. GetChargingProfilesRequest

The message GetChargingProfilesRequest can be used by the CSMS to request installed charging profiles from the Charging Station. The charging profiles will then be reported by the Charging Station via ReportChargingProfilesRequest messages.

Class

Field Name	Field Type	Card.	Description
requestId	integer	1..1	Required. Reference identification that is to be used by the Charging Station in the ReportChargingProfilesRequest when provided.
evseId	integer	0..1	Optional. For which EVSE installed charging profiles SHALL be reported. If 0, only charging profiles installed on the Charging Station itself (the grid connection) SHALL be reported. If omitted, all installed charging profiles SHALL be reported.
chargingProfile	ChargingProfileCriterionType	1..1	Required. Specifies the charging profile.

1.19.2. GetChargingProfilesResponse

This contains the field definition of the GetChargingProfilesResponse PDU sent by the Charging Station to the CSMS in response to a GetChargingProfilesRequest.

Class

Field Name	Field Type	Card.	Description
status	GetChargingProfileStatusEnumType	1..1	Required. This indicates whether the Charging Station is able to process this request and will send ReportChargingProfilesRequest messages.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.20. GetCompositeSchedule

1.20.1. GetCompositeScheduleRequest

This contains the field definition of the GetCompositeScheduleRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
duration	integer	1..1	Required. Length of the requested schedule in seconds.
chargingRateUnit	ChargingRateUnitEnumType	0..1	Optional. Can be used to force a power or current profile.
evseId	integer	1..1	Required. The ID of the EVSE for which the schedule is requested. When evseid=0, the Charging Station will calculate the expected consumption for the grid connection.

1.20.2. GetCompositeScheduleResponse

This contains the field definition of the GetCompositeScheduleResponse PDU sent by the Charging Station to the CSMS in response to a GetCompositeScheduleRequest .

Class

Field Name	Field Type	Card.	Description
status	GenericStatusEnumType	1..1	Required. The Charging Station will indicate if it was able to process the request
schedule	CompositeScheduleType	0..1	Optional. This field contains the calculated composite schedule. It may only be omitted when this message contains status Rejected.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.21. GetDisplayMessages

1.21.1. GetDisplayMessagesRequest

Class

Field Name	Field Type	Card.	Description
id	integer	0..*	Optional. If provided the Charging Station shall return Display Messages of the given ids. This field SHALL NOT contain more ids than set in NumberOfDisplayMessages.maxLimit
requestId	integer	1..1	Required. The Id of this request.
priority	MessagePriorityEnumType	0..1	Optional. If provided the Charging Station shall return Display Messages with the given priority only.
state	MessageStateEnumType	0..1	Optional. If provided the Charging Station shall return Display Messages with the given state only.

1.21.2. GetDisplayMessagesResponse

Class

Field Name	Field Type	Card.	Description
status	GetDisplayMessagesStatusEnumType	1..1	Required. Indicates if the Charging Station has Display Messages that match the request criteria in the GetDisplayMessagesRequest
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.22. GetInstalledCertificateIds

1.22.1. GetInstalledCertificateIdsRequest

Used by the CSMS to request an overview of the installed certificates on a Charging Station.

Class

Field Name	Field Type	Card.	Description
certificateType	GetCertificateIdUseEnumType	0..*	Optional. Indicates the type of certificates requested. When omitted, all certificate types are requested.

1.22.2. GetInstalledCertificateIdsResponse

Response to a GetInstalledCertificateIDsRequest.

Class

Field Name	Field Type	Card.	Description
status	GetInstalledCertificateStatusEnumType	1..1	Required. Charging Station indicates if it can process the request.
certificateHashDataChain	CertificateHashDataChainType	0..*	Optional. The Charging Station includes the Certificate information for each available certificate.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.23. GetLocalListVersion

1.23.1. GetLocalListVersionRequest

This contains the field definition of the GetLocalListVersionRequest PDU sent by the CSMS to the Charging Station. No fields are defined.

1.23.2. GetLocalListVersionResponse

This contains the field definition of the GetLocalListVersionResponse PDU sent by the Charging Station to CSMS in response to a GetLocalListVersionRequest.

Class

Field Name	Field Type	Card.	Description
versionNumber	integer	1..1	Required. This contains the current version number of the local authorization list in the Charging Station.

1.24. GetLog

1.24.1. GetLogRequest

This contains the field definition of the GetLogRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
logType	LogEnumType	1..1	Required. This contains the type of log file that the Charging Station should send.
requestId	integer	1..1	Required. The Id of this request
retries	integer	0..1	Optional. This specifies how many times the Charging Station must try to upload the log before giving up. If this field is not present, it is left to Charging Station to decide how many times it wants to retry.
retryInterval	integer	0..1	Optional. The interval in seconds after which a retry may be attempted. If this field is not present, it is left to Charging Station to decide how long to wait between attempts.
log	LogParametersType	1..1	Required. This field specifies the requested log and the location to which the log should be sent.

1.24.2. GetLogResponse

This contains the field definition of the GetLogResponse PDU sent by the Charging Station to the CSMS in response to a GetLogRequest.

Class

Field Name	Field Type	Card.	Description
status	LogStatusEnumType	1..1	Required. This field indicates whether the Charging Station was able to accept the request.
filename	string[0..255]	0..1	Optional. This contains the name of the log file that will be uploaded. This field is not present when no logging information is available.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.25. GetMonitoringReport

1.25.1. GetMonitoringReportRequest

This contains the field definition of the GetMonitoringReportRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
requestId	integer	1..1	Required. The Id of the request.
monitoringCriteria	MonitoringCriterionEnumType	0..3	Optional. This field contains criteria for components for which a monitoring report is requested
componentVariable	ComponentVariableType	0..*	Optional. This field specifies the components and variables for which a monitoring report is requested.

1.25.2. GetMonitoringReportResponse

This contains the field definition of the GetMonitoringReportResponse PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
status	GenericDeviceModelStatusEnumType	1..1	Required. This field indicates whether the Charging Station was able to accept the request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.26. GetReport

1.26.1. GetReportRequest

This contains the field definition of the GetReportRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
requestId	integer	1..1	Required. The Id of the request.
componentCriteria	ComponentCriterionEnumType	0..4	Optional. This field contains criteria for components for which a report is requested
componentVariable	ComponentVariableType	0..*	Optional. This field specifies the components and variables for which a report is requested.

1.26.2. GetReportResponse

The response to a GetReportRequest, sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
status	GenericDeviceModelStatusEnumType	1..1	Required. This field indicates whether the Charging Station was able to accept the request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.27. GetTransactionStatus

1.27.1. GetTransactionStatusRequest

With this message, the CSMS can ask the Charging Station whether it has transaction-related messages waiting to be delivered to the CSMS. When a transactionId is provided, only messages for a specific transaction are asked for.

Class

Field Name	Field Type	Card.	Description
transactionId	identifierString[0..36]	0..1	Optional. The Id of the transaction for which the status is requested.

1.27.2. GetTransactionStatusResponse

The response to a GetTransactionStatusRequest, sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
ongoingIndicator	boolean	0..1	Optional. Whether the transaction is still ongoing.
messagesInQueue	boolean	1..1	Required. Whether there are still message to be delivered.

1.28. GetVariables

1.28.1. GetVariablesRequest

This contains the field definition of the GetVariablesRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
getVariableData	GetVariableDataType	1..*	Required. List of requested variables.

1.28.2. GetVariablesResponse

This contains the field definition of the GetVariablesResponse PDU sent by the CSMS to the Charging Station in response to GetVariablesRequest.

Class

Field Name	Field Type	Card.	Description
getVariableResult	GetVariableResultType	1..*	Required. List of requested variables and their values.

1.29. Heartbeat

1.29.1. HeartbeatRequest

This contains the field definition of the HeartbeatRequest PDU sent by the Charging Station to the CSMS. No fields are defined.

1.29.2. HeartbeatResponse

This contains the field definition of the HeartbeatResponse PDU sent by the CSMS to the Charging Station in response to a HeartbeatRequest.

Class

Field Name	Field Type	Card.	Description
currentTime	dateTime	1..1	Required. Contains the current time of the CSMS.

1.30. InstallCertificate

1.30.1. InstallCertificateRequest

Used by the CSMS to request installation of a certificate on a Charging Station.

Class

Field Name	Field Type	Card.	Description
certificateType	InstallCertificateUseEnumType	1..1	Required. Indicates the certificate type that is sent.
certificate	string[0..5500]	1..1	Required. A PEM encoded X.509 certificate.

1.30.2. InstallCertificateResponse

The response to a InstallCertificateRequest, sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
status	InstallCertificateStatusEnumType	1..1	Required. Charging Station indicates if installation was successful.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.31. LogStatusNotification

1.31.1. LogStatusNotificationRequest

This contains the field definition of the LogStatusNotificationRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
status	UploadLogStatusEnumType	1..1	Required. This contains the status of the log upload.
requestId	integer	0..1	Optional. The request id that was provided in GetLogRequest that started this log upload. This field is mandatory, unless the message was triggered by a TriggerMessageRequest AND there is no log upload ongoing.

1.31.2. LogStatusNotificationResponse

This contains the field definition of the LogStatusNotificationResponse PDU sent by the CSMS to the Charging Station in response to LogStatusNotificationRequest. No fields are defined.

1.32. MeterValues

1.32.1. MeterValuesRequest

Class

Field Name	Field Type	Card.	Description
evseId	integer	1..1	Required. This contains a number (>0) designating an EVSE of the Charging Station. '0' (zero) is used to designate the main power meter.
meterValue	MeterValueType	1..*	Required. The sampled meter values with timestamps.

1.32.2. MeterValuesResponse

This contains the field definition of the MeterValuesResponse PDU sent by the CSMS to the Charging Station in response to a MeterValuesRequest PDU. This message is deprecated. This message might be removed in a future version of OCPP. It will be replaced by Device Management Monitoring events.

No fields are defined.

1.33. NotifyChargingLimit

1.33.1. NotifyChargingLimitRequest

The message NotifyChargingLimitRequest can be used to communicate a charging limit, set by an external system on the Charging Station (Not installed by the CSO via SetChargingProfileRequest), to the CSMS.

Class

Field Name	Field Type	Card.	Description
evseId	integer	0..1	Optional. The charging schedule contained in this notification applies to an EVSE. evseId must be > 0.
chargingLimit	ChargingLimitType	1..1	Required. This contains the source of the charging limit and whether it is grid critical.
chargingSchedule	ChargingScheduleType	0..*	Optional. Contains limits for the available power or current over time, as set by the external source.

1.33.2. NotifyChargingLimitResponse

The NotifyChargingLimitResponse message is sent by the CSMS to the Charging Station in response to a NotifyChargingLimitsRequest. No fields are defined.

1.34. NotifyCustomerInformation

This contains the field definition of the NotifyCustomerInformationRequest PDU sent by the Charging Station to the CSMS.

1.34.1. NotifyCustomerInformationRequest

Class

Field Name	Field Type	Card.	Description
data	string[0..512]	1..1	Required. (Part of) the requested data. No format specified in which the data is returned. Should be human readable.
tbc	boolean	0..1	Optional. “to be continued” indicator. Indicates whether another part of the monitoringData follows in an upcoming notifyMonitoringReportRequest message. Default value when omitted is false.
seqNo	integer	1..1	Required. Sequence number of this message. First message starts at 0.
generatedAt	dateTime	1..1	Required. Timestamp of the moment this message was generated at the Charging Station.
requestId	integer	1..1	Required. The Id of the request.

1.34.2. NotifyCustomerInformationResponse

1.35. NotifyDisplayMessages

1.35.1. NotifyDisplayMessagesRequest

This contains the field definition of the NotifyDisplayMessagesRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
requestId	integer	1..1	Required. The id of the GetDisplayMessagesRequest that requested this message.
tbc	boolean	0..1	Optional. "to be continued" indicator. Indicates whether another part of the report follows in an upcoming NotifyDisplayMessagesRequest message. Default value when omitted is false.
messageInfo	MessageInfoType	0..*	Optional. The requested display message as configured in the Charging Station.

1.35.2. NotifyDisplayMessagesResponse

The NotifyDisplayMessagesResponse message is sent by the CSMS to the Charging Station in response to a NotifyDisplayMessagesRequest. No fields are defined.

1.36. NotifyEVChargingNeeds

1.36.1. NotifyEVChargingNeedsRequest

The Charging Station uses this message to communicate the charging needs as calculated by the EV to the CSMS.

Class

Field Name	Field Type	Card.	Description
maxScheduleTuples	integer	0..1	Optional. Contains the maximum schedule tuples the car supports per schedule.
evseId	integer	1..1	Required. Defines the EVSE and connector to which the EV is connected. EvseId may not be 0.
chargingNeeds	ChargingNeedsType	1..1	Required. The characteristics of the energy delivery required.

1.36.2. NotifyEVChargingNeedsResponse

Response to a NotifyEVChargingNeedsRequest.

Class

Field Name	Field Type	Card.	Description
status	NotifyEVChargingNeedsStatusEnumType	1..1	Required. Returns whether the CSMS has been able to process the message successfully. It does not imply that the evChargingNeeds can be met with the current charging profile.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.37. NotifyEVChargingSchedule

1.37.1. NotifyEVChargingScheduleRequest

The Charging Station uses this message to communicate the charging schedule as calculated by the EV to the CSMS.

Class

Field Name	Field Type	Card.	Description
timeBase	dateTime	1..1	Required. Periods contained in the charging profile are relative to this point in time.
evseId	integer	1..1	Required. The charging schedule contained in this notification applies to an EVSE. EvseId must be > 0.
chargingSchedule	ChargingScheduleType	1..1	Required. Planned energy consumption of the EV over time. Always relative to timeBase.

1.37.2. NotifyEVChargingScheduleResponse

Response to a NotifyEVChargingScheduleRequest message.

Class

Field Name	Field Type	Card.	Description
status	GenericStatusEnumType	1..1	Required. Returns whether the CSMS has been able to process the message successfully. It does not imply any approval of the charging schedule.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.38. NotifyEvent

1.38.1. NotifyEventRequest

This contains the field definition of the NotifyEventRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
generatedAt	dateTime	1..1	Required. Timestamp of the moment this message was generated at the Charging Station.
tbc	boolean	0..1	Optional. “to be continued” indicator. Indicates whether another part of the report follows in an upcoming notifyEventRequest message. Default value when omitted is false.
seqNo	integer	1..1	Required. Sequence number of this message. First message starts at 0.
eventData	EventDataType	1..*	Required. List of EventData. An EventData element contains only the Component, Variable and VariableMonitoring data that caused the event. The list of EventData will usally contain one eventData element, but the Charging Station may decide to group multiple events in one notification. For example, when multiple events triggered at the same time.

1.38.2. NotifyEventResponse

Response to NotifyEventRequest. No fields are defined.

1.39. NotifyMonitoringReport

1.39.1. NotifyMonitoringReportRequest

This contains the field definition of the NotifyMonitoringRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
requestId	integer	1..1	Required. The id of the GetMonitoringRequest that requested this report.
tbc	boolean	0..1	Optional. “to be continued” indicator. Indicates whether another part of the monitoringData follows in an upcoming notifyMonitoringReportRequest message. Default value when omitted is false.
seqNo	integer	1..1	Required. Sequence number of this message. First message starts at 0.
generatedAt	dateTime	1..1	Required. Timestamp of the moment this message was generated at the Charging Station.
monitor	MonitoringDataType	0..*	Optional. List of MonitoringData containing monitoring settings.

1.39.2. NotifyMonitoringReportResponse

Response to a NotifyMonitoringRequest message. No fields are defined.

1.40. NotifyReport

1.40.1. NotifyReportRequest

This contains the field definition of the NotifyReportRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
requestId	integer	1..1	Required. The id of the GetReportRequest or GetBaseReportRequest that requested this report
generatedAt	dateTime	1..1	Required. Timestamp of the moment this message was generated at the Charging Station.
tbc	boolean	0..1	Optional. “to be continued” indicator. Indicates whether another part of the report follows in an upcoming notifyReportRequest message. Default value when omitted is false.
seqNo	integer	1..1	Required. Sequence number of this message. First message starts at 0.
reportData	ReportDataType	0..*	Optional. List of ReportData.

1.40.2. NotifyReportResponse

Response to a NotifyReportRequest message. No fields are defined.

1.41. PublishFirmware

1.41.1. PublishFirmwareRequest

This contains the field definition of the PublishFirmwareRequest PDU sent by the CSMS to the Local Controller.

Class

Field Name	Field Type	Card.	Description
location	string[0..512]	1..1	Required. This contains a string containing a URI pointing to a location from which to retrieve the firmware.
retries	integer	0..1	Optional. This specifies how many times Charging Station must try to download the firmware before giving up. If this field is not present, it is left to Charging Station to decide how many times it wants to retry.
checksum	identifierString[0..32]	1..1	Required. The MD5 checksum over the entire firmware file as a hexadecimal string of length 32.
requestId	integer	1..1	Required. The Id of the request.
retryInterval	integer	0..1	Optional. The interval in seconds after which a retry may be attempted. If this field is not present, it is left to Charging Station to decide how long to wait between attempts.

1.41.2. PublishFirmwareResponse

This contains the field definition of the PublishFirmwareResponse PDU sent by the Local Controller to the CSMS in response to a PublishFirmwareRequest.

Class

Field Name	Field Type	Card.	Description
status	GenericStatusEnumType	1..1	Required. Indicates whether the request was accepted.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.42. PublishFirmwareStatusNotification

1.42.1. PublishFirmwareStatusNotificationRequest

This contains the field definition of the PublishFirmwareStatusNotificationRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
status	PublishFirmwareStatusEnumType	1..1	Required. This contains the progress status of the publishfirmware installation.
location	string[0..512]	0..*	Optional. Required if status is Published. Can be multiple URI's, if the Local Controller supports e.g. HTTP, HTTPS, and FTP.
requestId	integer	0..1	Optional. The request id that was provided in the PublishFirmwareRequest which triggered this action.

1.42.2. PublishFirmwareStatusNotificationResponse

This contains the field definition of the PublishFirmwareStatusNotificationResponse PDU sent by the CSMS to the Charging station in response to a PublishFirmwareStatusNotificationRequest.

1.43. ReportChargingProfiles

1.43.1. ReportChargingProfilesRequest

Reports charging profiles installed in the Charging Station, as requested via a GetChargingProfilesRequest message. The charging profile report can be split over multiple ReportChargingProfilesRequest messages, this can be because charging profiles for different charging sources need to be reported, or because there is just to much data for one message.

Class

Field Name	Field Type	Card.	Description
requestId	integer	1..1	Required. Id used to match the GetChargingProfilesRequest message with the resulting ReportChargingProfilesRequest messages. When the CSMS provided a requestId in the GetChargingProfilesRequest, this field SHALL contain the same value.
chargingLimitSource	ChargingLimitSourceEnumType	1..1	Required. Source that has installed this charging profile.
tbc	boolean	0..1	Optional. To Be Continued. Default value when omitted: false. false indicates that there are no further messages as part of this report.
evseId	integer	1..1	Required. The evse to which the charging profile applies. If evseId = 0, the message contains an overall limit for the Charging Station.
chargingProfile	ChargingProfileType	1..*	Required. The charging profile as configured in the Charging Station.

1.43.2. ReportChargingProfilesResponse

The ReportChargingProfilesResponse message is sent by the CSMS to the Charging Station in response to a ReportChargingProfilesRequest. No fields are defined.

1.44. RequestStartTransaction

1.44.1. RequestStartTransactionRequest

This contains the field definitions of the RequestStartTransactionRequest PDU sent to Charging Station by CSMS.

Class

Field Name	Field Type	Card.	Description
evseId	integer	0..1	Optional. Number of the EVSE on which to start the transaction. EvseId SHALL be > 0
remoteStartId	integer	1..1	Required. Id given by the server to this start request. The Charging Station might return this in the TransactionEventRequest, letting the server know which transaction was started for this request. Use to start a transaction.
idToken	IdTokenType	1..1	Required. The identifier that the Charging Station must use to start a transaction.
chargingProfile	ChargingProfileType	0..1	Optional. Charging Profile to be used by the Charging Station for the requested transaction. ChargingProfilePurpose MUST be set to TxProfile
groupIdToken	IdTokenType	0..1	Optional. The group identifier that the Charging Station must use to start a transaction.

1.44.2. RequestStartTransactionResponse

This contains the field definitions of the RequestStartTransactionResponse PDU sent from Charging Station to CSMS.

Class

Field Name	Field Type	Card.	Description
status	RequestStartStopStatusEnumType	1..1	Required. Status indicating whether the Charging Station accepts the request to start a transaction.
transactionId	identifierString[0..36]	0..1	Optional. When the transaction was already started by the Charging Station before the RequestStartTransactionRequest was received, for example: cable plugged in first. This contains the transactionId of the already started transaction.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.45. RequestStopTransaction

1.45.1. RequestStopTransactionRequest

This contains the field definitions of the RequestStopTransactionRequest PDU sent to Charging Station by CSMS.

Class

Field Name	Field Type	Card.	Description
transactionId	identifierString[0..36]	1..1	Required. The identifier of the transaction which the Charging Station is requested to stop.

1.45.2. RequestStopTransactionResponse

This contains the field definitions of the RequestStopTransactionResponse PDU sent from Charging Station to CSMS.

Class

Field Name	Field Type	Card.	Description
status	RequestStartStopStatusEnumType	1..1	Required. Status indicating whether Charging Station accepts the request to stop a transaction.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.46. ReservationStatusUpdate

1.46.1. ReservationStatusUpdateRequest

This contains the field definition of the ReservationStatusUpdateRequest PDU sent by the Charging Station to the CSMS.

Class

Field Name	Field Type	Card.	Description
reservationId	integer	1..1	Required. The ID of the reservation.
reservationUpdateStatus	ReservationUpdateStatusEnumType	1..1	Required. The updated reservation status.

1.46.2. ReservationStatusUpdateResponse

This contains the field definition of the ReservationStatusUpdateResponse PDU sent by the CSMS to the Charging Station in response to a ReservationStatusUpdateRequest. No fields are defined.

1.47. ReserveNow

1.47.1. ReserveNowRequest

This contains the field definition of the ReserveNowRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
id	integer	1..1	Required. Id of reservation.
expiryDateTime	dateTime	1..1	Required. Date and time at which the reservation expires.
connectorType	ConnectorEnumType	0..1	Optional. This field specifies the connector type.
evseId	integer	0..1	Optional. This contains ID of the evse to be reserved.
idToken	IdTokenType	1..1	Required. The identifier for which the reservation is made.
groupIdToken	IdTokenType	0..1	Optional. The group identifier for which the reservation is made.

1.47.2. ReserveNowResponse

This contains the field definition of the ReserveNowResponse PDU sent by the Charging Station to the CSMS in response to ReserveNowRequest PDU.

Class

Field Name	Field Type	Card.	Description
status	ReserveNowStatusEnumType	1..1	Required. This indicates the success or failure of the reservation.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.48. Reset

1.48.1. ResetRequest

This contains the field definition of the ResetRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
type	ResetEnumType	1..1	Required. This contains the type of reset that the Charging Station or EVSE should perform.
evseId	integer	0..1	Optional. This contains the ID of a specific EVSE that needs to be reset, instead of the entire Charging Station.

1.48.2. ResetResponse

This contains the field definition of the ResetResponse PDU sent by the Charging Station to the CSMS in response to ResetRequest.

Class

Field Name	Field Type	Card.	Description
status	ResetStatusEnumType	1..1	Required. This indicates whether the Charging Station is able to perform the reset.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.49. SecurityEventNotification

1.49.1. SecurityEventNotificationRequest

Sent by the Charging Station to the CSMS in case of a security event.

Class

Field Name	Field Type	Card.	Description
type	string[0..50]	1..1	Required. Type of the security event. This value should be taken from the Security events list.
timestamp	dateTime	1..1	Required. Date and time at which the event occurred.
techInfo	string[0..255]	0..1	Optional. Additional information about the occurred security event.

1.49.2. SecurityEventNotificationResponse

Sent by the CSMS to the Charging Station to confirm the receipt of a SecurityEventNotificationRequest message. No fields are defined.

1.50. SendLocalList

1.50.1. SendLocalListRequest

This contains the field definition of the SendLocalListRequest PDU sent by the CSMS to the Charging Station. If no (empty) localAuthorizationList is given and the updateType is Full, all IdTokens are removed from the list. Requesting a Differential update without or with empty localAuthorizationList will have no effect on the list. All IdTokens in the localAuthorizationList MUST be unique, no duplicate values are allowed.

Class

Field Name	Field Type	Card.	Description
versionNumber	integer	1..1	Required. In case of a full update this is the version number of the full list. In case of a differential update it is the version number of the list after the update has been applied.
updateType	UpdateEnumType	1..1	Required. This contains the type of update (full or differential) of this request.
localAuthorizationList	AuthorizationData	0..*	Optional. This contains the Local Authorization List entries.

1.50.2. SendLocalListResponse

This contains the field definition of the SendLocalListResponse PDU sent by the Charging Station to the CSMS in response to SendLocalListRequest PDU.

Class

Field Name	Field Type	Card.	Description
status	SendLocalListStatusEnumType	1..1	Required. This indicates whether the Charging Station has successfully received and applied the update of the Local Authorization List.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.51. SetChargingProfile

1.51.1. SetChargingProfileRequest

This contains the field definition of the SetChargingProfileRequest PDU sent by the CSMS to the Charging Station. The CSMS uses this message to send charging profiles to a Charging Station.

Class

Field Name	Field Type	Card.	Description
evseId	integer	1..1	Required. For TxDefaultProfile an evseId=0 applies the profile to each individual evse. For ChargingStationMaxProfile and ChargingStationExternalConstraints an evseId=0 contains an overal limit for the whole Charging Station.
chargingProfile	ChargingProfileType	1..1	Required. The charging profile to be set at the Charging Station.

1.51.2. SetChargingProfileResponse

This contains the field definition of the SetChargingProfileResponse PDU sent by the Charging Station to the CSMS in response to SetChargingProfileRequest PDU.

Class

Field Name	Field Type	Card.	Description
status	ChargingProfileStatusEnumType	1..1	Required. Returns whether the Charging Station has been able to process the message successfully. This does not guarantee the schedule will be followed to the letter. There might be other constraints the Charging Station may need to take into account.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.52. SetDisplayMessage

1.52.1. SetDisplayMessageRequest

This contains the field definition of the SetDisplayMessageRequest PDU sent by the CSMS to the Charging Station. The CSMS asks the Charging Station to configure a new display message that the Charging Station will display (in the future). See also O01 - Set Display Message, O02 - Set Display Message for Transaction and O06 - Replace Display Message

Class

Field Name	Field Type	Card.	Description
message	MessageInfoType	1..1	Required. Message to be configured in the Charging Station, to be displayed.

1.52.2. SetDisplayMessageResponse

This contains the field definition of the SetDisplayMessageResponse PDU sent by the Charging Station to the CSMS in a response to a SetDisplayMessageRequest. See also O01 - Set Display Message, O02 - Set Display Message for Transaction and O06 - Replace Display Message

Class

Field Name	Field Type	Card.	Description
status	DisplayMessageStatusEnumType	1..1	Required. This indicates whether the Charging Station is able to display the message.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.53. SetMonitoringBase

1.53.1. SetMonitoringBaseRequest

This contains the field definition of the SetMonitoringBaseRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
monitoringBase	MonitoringBaseEnumType	1..1	Required. Specify which monitoring base will be set

1.53.2. SetMonitoringBaseResponse

This contains the field definition of the SetMonitoringBaseResponse PDU sent by the Charging Station to the CSMS in response to a SetMonitoringBaseRequest.

Class

Field Name	Field Type	Card.	Description
status	GenericDeviceModelStatusEnumType	1..1	Required. Indicates whether the Charging Station was able to accept the request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.54. SetMonitoringLevel

1.54.1. SetMonitoringLevelRequest

This contains the field definition of the SetMonitoringLevelRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
severity	integer	1..1	Required. The Charging Station SHALL only report events with a severity number lower than or equal to this severity. The severity range is 0-9, with 0 as the highest and 9 as the lowest severity level. The severity levels have the following meaning: **0-Danger** Indicates lives are potentially in danger. Urgent attention is needed and action should be taken immediately. **1-Hardware Failure** Indicates that the Charging Station is unable to continue regular operations due to Hardware issues. Action is required. **2-System Failure** Indicates that the Charging Station is unable to continue regular operations due to software or minor hardware issues. Action is required. **3-Critical** Indicates a critical error. Action is required. **4-Error** Indicates a non-urgent error. Action is required. **5-Alert** Indicates an alert event. Default severity for any type of monitoring event. **6-Warning** Indicates a warning event. Action may be required. **7-Notice** Indicates an unusual event. No immediate action is required. **8-Informational** Indicates a regular operational event. May be used for reporting, measuring throughput, etc. No action is required. **9-Debug** Indicates information useful to developers for debugging, not useful during operations.

1.54.2. SetMonitoringLevelResponse

This contains the field definition of the SetMonitoringLevelResponse PDU sent by the Charging Station to the CSMS in response to a SetMonitoringLevelRequest.

Class

Field Name	Field Type	Card.	Description
status	GenericStatusEnumType	1..1	Required. Indicates whether the Charging Station was able to accept the request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.55. SetNetworkProfile

1.55.1. SetNetworkProfileRequest

With this message the CSMS gains the ability to configure the connection data (e.g. CSMS URL, OCPP version, APN, etc) on a Charging Station.

Class

Field Name	Field Type	Card.	Description
configurationSlot	integer	1..1	Required. Slot in which the configuration should be stored.
connectionData	NetworkConnectionProfileType	1..1	Required. Connection details.

1.55.2. SetNetworkProfileResponse

This contains the field definition of the SetNetworkProfileResponse PDU sent by the Charging Station to the CSMS in response to a SetNetworkProfileRequest.

Class

Field Name	Field Type	Card.	Description
status	SetNetworkProfileStatusEnumType	1..1	Required. Result of operation.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.56. SetVariableMonitoring

1.56.1. SetVariableMonitoringRequest

This contains the field definition of the SetVariableMonitoringRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
setMonitoringData	SetMonitoringDataType	1..*	Required. List of MonitoringData containing monitoring settings.

1.56.2. SetVariableMonitoringResponse

This contains the field definition of the SetVariableMonitoringResponse PDU sent by the Charging Station to the CSMS in response to a SetVariableMonitoringRequest.

Class

Field Name	Field Type	Card.	Description
setMonitoringResult	SetMonitoringResultType	1..*	Required. List of result statuses per monitor.

1.57. SetVariables

1.57.1. SetVariablesRequest

This contains the field definition of the SetVariablesRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
setVariableData	SetVariableDataType	1..*	Required. List of Component-Variable pairs and attribute values to set.

1.57.2. SetVariablesResponse

This contains the field definition of the SetVariablesResponse PDU sent by the Charging Station to the CSMS in response to a SetVariablesRequest.

Class

Field Name	Field Type	Card.	Description
setVariableResult	SetVariableResultType	1..*	Required. List of result statuses per Component-Variable.

1.58. SignCertificate

1.58.1. SignCertificateRequest

Sent by the Charging Station to the CSMS to request that the Certificate Authority signs the public key into a certificate.

Class

Field Name	Field Type	Card.	Description
csr	string[0..5500]	1..1	Required. The Charging Station SHALL send the public key in form of a Certificate Signing Request (CSR) as described in RFC 2986 [22] and then PEM encoded, using the SignCertificateRequest message.
certificateType	CertificateSigningUseEnumType	0..1	Optional. Indicates the type of certificate that is to be signed. When omitted the certificate is to be used for both the 15118 connection (if implemented) and the Charging Station to CSMS connection.

1.58.2. SignCertificateResponse

Sent by the CSMS to the Charging Station in response to the SignCertificateRequest message.

Class

Field Name	Field Type	Card.	Description
status	GenericStatusEnumType	1..1	Required. Specifies whether the CSMS can process the request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.59. StatusNotification

1.59.1. StatusNotificationRequest

Class

Field Name	Field Type	Card.	Description
timestamp	dateTime	1..1	Required. The time for which the status is reported. If absent time of receipt of the message will be assumed.
connectorStatus	ConnectorStatusEnumType	1..1	Required. This contains the current status of the Connector.
evseId	integer	1..1	Required. The id of the EVSE to which the connector belongs for which the the status is reported.
connectorId	integer	1..1	Required. The id of the connector within the EVSE for which the status is reported.

1.59.2. StatusNotificationResponse

This contains the field definition of StatusNotificationResponse sent by the CSMS to the Charging Station in response to a StatusNotificationRequest. This message is deprecated. This message might be removed in a future version of OCPP. It will be replaced by Device Management Monitoring events.

No fields are defined.

1.60. TransactionEvent

1.60.1. TransactionEventRequest

This section contains the field definition of the TransactionEventRequest PDU sent by the Charging Station to the CSMS. For each of the eventTypes; Started, Updated and Ended, the corresponding cardinality is specified.

Class

Field Name	Field Type	Card.	Description
eventType	TransactionEventEnumType	1..1	Required. This contains the type of this event. The first TransactionEvent of a transaction SHALL contain: "Started" The last TransactionEvent of a transaction SHALL contain: "Ended" All others SHALL contain: "Updated"
timestamp	dateTime	1..1	Required. The date and time at which this transaction event occurred.
triggerReason	TriggerReasonEnumType	1..1	Required. Reason the Charging Station sends this message to the CSMS
seqNo	integer	1..1	Required. Incremental sequence number, helps with determining if all messages of a transaction have been received.
offline	boolean	0..1	Optional. Indication that this transaction event happened when the Charging Station was offline. Default = false, meaning: the event occurred when the Charging Station was online.
numberOfPhasesUsed	integer	0..1	Optional. If the Charging Station is able to report the number of phases used, then it SHALL provide it. When omitted the CSMS may be able to determine the number of phases used via device management.
cableMaxCurrent	integer	0..1	Optional. The maximum current of the connected cable in Ampere (A).
reservationId	integer	0..1	Optional. This contains the Id of the reservation that terminates as a result of this transaction.
transactionInfo	TransactionType	1..1	Required. Contains transaction specific information.
idToken	IdTokenType	0..1	Optional. This contains the identifier for which a transaction has to be/was started. Is required when the EV Driver becomes authorized for this transaction. The IdToken should only be send once in a TransactionEventRequest for every authorization done for this transaction.
evse	EVSEType	0..1	Optional. This identifies which evse (and connector) of the Charging Station is used.
meterValue	MeterValueType	0..*	Optional. This contains the relevant meter values. Depending on the EventType of this TransactionEvent the following Configuration Variable is used to configure the content: Started: SampledDataTxStartedMeasurands Updated: SampledDataTxUpdatedMeasurands Ended: SampledDataTxEndedMeasurands & AlignedDataTxEndedMeasurands

1.60.2. TransactionEventResponse

This contains the field definition of the TransactionEventResponse PDU sent by the CSMS to the Charging Station in response to a TransactionEventRequest.

Class

Field Name	Field Type	Card.	Description
totalCost	decimal	0..1	Optional. SHALL only be sent when charging has ended. Final total cost of this transaction, including taxes. In the currency configured with the Configuration Variable: `Currency`. When omitted, the transaction was NOT free. To indicate a free transaction, the CSMS SHALL send 0.00.
chargingPriority	integer	0..1	Optional. Priority from a business point of view. Default priority is 0, The range is from -9 to 9. Higher values indicate a higher priority. The chargingPriority in TransactionEventResponse is temporarily, so it may not be set in the IdTokenInfoType afterwards. Also the chargingPriority in TransactionEventResponse overrules the one in IdTokenInfoType.
idTokenInfo	IdTokenInfoType	0..1	Optional. This contains information about authorization status, expiry and group id. Is required when the transactionEventRequest contained an idToken.
updatedPersonalMessage	MessageContentType	0..1	Optional. This can contain updated personal message that can be shown to the EV Driver. This can be used to provide updated tariff information .

1.61. TriggerMessage

1.61.1. TriggerMessageRequest

This contains the field definition of the TriggerMessageRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
requestedMessage	MessageTriggerEnumType	1..1	Required. Type of message to be triggered.
evse	EVSEType	0..1	Optional. Can be used to specifiy the EVSE and Connector if required for the message which needs to be sent.

1.61.2. TriggerMessageResponse

This contains the field definition of the TriggerMessageResponse PDU sent by the Charging Station to the CSMS in response to TriggerMessageResponse.

Class

Field Name	Field Type	Card.	Description
status	TriggerMessageStatusEnumType	1..1	Required. Indicates whether the Charging Station will send the requested notification or not.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.62. UnlockConnector

1.62.1. UnlockConnectorRequest

This contains the field definition of the UnlockConnectorRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
evseId	integer	1..1	Required. This contains the identifier of the EVSE for which a connector needs to be unlocked.

Field Name	Field Type	Card.	Description
connectorId	integer	1..1	Required. This contains the identifier of the connector that needs to be unlocked.

1.62.2. UnlockConnectorResponse

This contains the field definition of the UnlockConnectorResponse PDU sent by the Charging Station to the CSMS in response to an UnlockConnectorRequest.

Class

Field Name	Field Type	Card.	Description
status	UnlockStatusEnumType	1..1	Required. This indicates whether the Charging Station has unlocked the connector.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

1.63. UnpublishFirmware

1.63.1. UnpublishFirmwareRequest

This contains the field definition of the UnpublishFirmwareRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
checksum	identifierString[0..32]	1..1	Required. The MD5 checksum over the entire firmware file as a hexadecimal string of length 32.

1.63.2. UnpublishFirmwareResponse

This contains the field definition of the UnpublishFirmwareResponse PDU sent by the Charging Station to the CSMS in response to a UnpublishFirmwareRequest.

Class

Field Name	Field Type	Card.	Description
status	UnpublishFirmwareStatusEnumType	1..1	Required. Indicates whether the Local Controller succeeded in unpublishing the firmware.

1.64. UpdateFirmware

1.64.1. UpdateFirmwareRequest

This contains the field definition of the UpdateFirmwareRequest PDU sent by the CSMS to the Charging Station.

Class

Field Name	Field Type	Card.	Description
retries	integer	0..1	Optional. This specifies how many times Charging Station must try to download the firmware before giving up. If this field is not present, it is left to Charging Station to decide how many times it wants to retry.
retryInterval	integer	0..1	Optional. The interval in seconds after which a retry may be attempted. If this field is not present, it is left to Charging Station to decide how long to wait between attempts.
requestId	integer	1..1	Required. The Id of this request

Field Name	Field Type	Card.	Description
firmware	FirmwareType	1..1	Required. Specifies the firmware to be updated on the Charging Station.

1.64.2. UpdateFirmwareResponse

This contains the field definition of the UpdateFirmwareResponse PDU sent by the Charging Station to the CSMS in response to an UpdateFirmwareRequest.

Class

Field Name	Field Type	Card.	Description
status	UpdateFirmwareStatusEnumType	1..1	Required. This field indicates whether the Charging Station was able to accept the request.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

2. Datatypes

2.1. ACChargingParametersType

Class

EV AC charging parameters.

ACChargingParametersType is used by: Common:ChargingNeedsType

Field Name	Field Type	Card.	Description
energyAmount	integer	1..1	Required. Amount of energy requested (in Wh). This includes energy required for preconditioning.
evMinCurrent	integer	1..1	Required. Minimum current (amps) supported by the electric vehicle (per phase).
evMaxCurrent	integer	1..1	Required. Maximum current (amps) supported by the electric vehicle (per phase). Includes cable capacity.
evMaxVoltage	integer	1..1	Required. Maximum voltage supported by the electric vehicle

2.2. AdditionalInfoType

Class

Contains a case insensitive identifier to use for the authorization and the type of authorization to support multiple forms of identifiers.

AdditionalInfoType is used by: Common:IdTokenType

Field Name	Field Type	Card.	Description
additionalIdToken	identifierString[0..36]	1..1	Required. This field specifies the additional IdToken.
type	string[0..50]	1..1	Required. This defines the type of the additionalIdToken. This is a custom type, so the implementation needs to be agreed upon by all involved parties.

2.3. APNType

Class

Collection of configuration data needed to make a data-connection over a cellular network.

NOTE

When asking a GSM modem to dial in, it is possible to specify which mobile operator should be used. This can be done with the mobile country code (MCC) in combination with a mobile network code (MNC). Example: If your preferred network is Vodafone Netherlands, the MCC=204 and the MNC=04 which means the key PreferredNetwork = 20404 Some modems allows to specify a preferred network, which means, if this network is not available, a different network is used. If you specify UseOnlyPreferredNetwork and this network is not available, the modem will not dial in.

APNType is used by: SetNetworkProfileRequest.NetworkConnectionProfileType

Field Name	Field Type	Card.	Description
apn	string[0..512]	1..1	Required. The Access Point Name as an URL.
apnUserName	string[0..20]	0..1	Optional. APN username.
apnPassword	string[0..20]	0..1	Optional. APN Password.
simPin	integer	0..1	Optional. SIM card pin code.
preferredNetwork	identifierString[0..6]	0..1	Optional. Preferred network, written as MCC and MNC concatenated. See note.

Field Name	Field Type	Card.	Description
useOnlyPreferredNetwork	boolean	0..1	Optional. Default: false. Use only the preferred Network, do not dial in when not available. See Note.
apnAuthentication	APNAuthenticationEnumType	1..1	Required. Authentication method.

2.4. AuthorizationData

Class

Contains the identifier to use for authorization.

AuthorizationData is used by: SendLocalListRequest

Field Name	Field Type	Card.	Description
idTokenInfo	IdTokenInfoType	0..1	Optional. Required when UpdateType is Full. This contains information about authorization status, expiry and group id. For a Differential update the following applies: If this element is present, then this entry SHALL be added or updated in the Local Authorization List. If this element is absent, the entry for this IdToken in the Local Authorization List SHALL be deleted.
idToken	IdTokenType	1..1	Required. This contains the identifier which needs to be stored for authorization.

2.5. CertificateHashDataChainType

Class

CertificateHashDataChainType is used by: GetInstalledCertificateIdsResponse

Field Name	Field Type	Card.	Description
certificateType	GetCertificateIdUseEnumType	1..1	Required. Indicates the type of the requested certificate(s).
certificateHashData	CertificateHashDataType	1..1	Required. Information to identify a certificate.
childCertificateHashData	CertificateHashDataType	0..4	Optional. Information to identify the child certificate(s).

2.6. CertificateHashDataType

Class

CertificateHashDataType is used by: Common:CertificateHashDataChainType , DeleteCertificateRequest , CustomerInformationRequest

Field Name	Field Type	Card.	Description
hashAlgorithm	HashAlgorithmEnumType	1..1	Required. Used algorithms for the hashes provided.
issuerNameHash	identifierString[0..128]	1..1	Required. Hashed value of the Issuer DN (Distinguished Name).
issuerKeyHash	string[0..128]	1..1	Required. Hashed value of the issuers public key
serialNumber	identifierString[0..40]	1..1	Required. The serial number of the certificate.

2.7. ChargingLimitType

Class

ChargingLimitType is used by: NotifyChargingLimitRequest

Field Name	Field Type	Card.	Description
chargingLimitSource	ChargingLimitSourceEnumType	1..1	Required. Represents the source of the charging limit.
isGridCritical	boolean	0..1	Optional. Indicates whether the charging limit is critical for the grid.

2.8. ChargingNeedsType

Class

ChargingNeedsType is used by: NotifyEVChargingNeedsRequest

Field Name	Field Type	Card.	Description
requestedEnergyTransfer	EnergyTransferModeEnumType	1..1	Required. Mode of energy transfer requested by the EV.
departureTime	dateTime	0..1	Optional. Estimated departure time of the EV.
acChargingParameters	ACChargingParametersType	0..1	Optional. EV AC charging parameters.
dcChargingParameters	DCChargingParametersType	0..1	Optional. EV DC charging parameters

2.9. ChargingProfileCriterionType

Class

A ChargingProfile consists of ChargingSchedule, describing the amount of power or current that can be delivered per time interval.

ChargingProfileCriterionType is used by: GetChargingProfilesRequest

Field Name	Field Type	Card.	Description
chargingProfilePurpose	ChargingProfilePurposeEnumType	0..1	Optional. Defines the purpose of the schedule transferred by this profile
stackLevel	integer	0..1	Optional. Value determining level in hierarchy stack of profiles. Higher values have precedence over lower values. Lowest level is 0.
chargingProfileId	integer	0..*	Optional. List of all the chargingProfileIds requested. Any ChargingProfile that matches one of these profiles will be reported. If omitted, the Charging Station SHALL not filter on chargingProfileId. This field SHALL NOT contain more ids than set in ChargingProfileEntries.maxLimit
chargingLimitSource	ChargingLimitSourceEnumType	0..4	Optional. For which charging limit sources, charging profiles SHALL be reported. If omitted, the Charging Station SHALL not filter on chargingLimitSource.

2.10. ChargingProfileType

Class

A ChargingProfile consists of ChargingSchedule, describing the amount of power or current that can be delivered per time interval.

ChargingProfileType is used by: RequestStartTransactionRequest , SetChargingProfileRequest , ReportChargingProfilesRequest

Field Name	Field Type	Card.	Description
id	integer	1..1	Required. Id of ChargingProfile.
stackLevel	integer	1..1	Required. Value determining level in hierarchy stack of profiles. Higher values have precedence over lower values. Lowest level is 0.
chargingProfilePurpose	ChargingProfilePurposeEnumType	1..1	Required. Defines the purpose of the schedule transferred by this profile
chargingProfileKind	ChargingProfileKindEnumType	1..1	Required. Indicates the kind of schedule.
recurrencyKind	RecurrencyKindEnumType	0..1	Optional. Indicates the start point of a recurrence.

Field Name	Field Type	Card.	Description
validFrom	dateTime	0..1	Optional. Point in time at which the profile starts to be valid. If absent, the profile is valid as soon as it is received by the Charging Station.
validTo	dateTime	0..1	Optional. Point in time at which the profile stops to be valid. If absent, the profile is valid until it is replaced by another profile.
transactionId	identifierString[0..36]	0..1	Optional. SHALL only be included if ChargingProfilePurpose is set to TxProfile. The transactionId is used to match the profile to a specific transaction.
chargingSchedule	ChargingScheduleType	1..3	Required. Schedule that contains limits for the available power or current over time. In order to support ISO 15118 schedule negotiation, it supports at most three schedules with associated tariff to choose from.

2.11. ChargingSchedulePeriodType

Class

Charging schedule period structure defines a time period in a charging schedule.

ChargingSchedulePeriodType is used by: Common:ChargingScheduleType , Common:CompositeScheduleType

Field Name	Field Type	Card.	Description
startPeriod	integer	1..1	Required. Start of the period, in seconds from the start of schedule. The value of StartPeriod also defines the stop time of the previous period.
limit	decimal	1..1	Required. Charging rate limit during the schedule period, in the applicable chargingRateUnit, for example in Amperes (A) or Watts (W). Accepts at most one digit fraction (e.g. 8.1).
numberPhases	integer	0..1	Optional. The number of phases that can be used for charging. If a number of phases is needed, numberPhases=3 will be assumed unless another number is given.
phaseToUse	integer	0..1	Optional. Values: 1..3, Used if numberPhases=1 and if the EVSE is capable of switching the phase connected to the EV, i.e. ACPhaseSwitchingSupported is defined and true. It's not allowed unless both conditions above are true. If both conditions are true, and phaseToUse is omitted, the Charging Station / EVSE will make the selection on its own.

2.12. ChargingScheduleType

Class

Charging schedule structure defines a list of charging periods, as used in: GetCompositeSchedule.conf and ChargingProfile.

ChargingScheduleType is used by: Common:ChargingProfileType , NotifyChargingLimitRequest , NotifyEVChargingScheduleRequest

Field Name	Field Type	Card.	Description
id	integer	1..1	Required. Identifies the ChargingSchedule.
startSchedule	dateTime	0..1	Optional. Starting point of an absolute schedule. If absent the schedule will be relative to start of charging.
duration	integer	0..1	Optional. Duration of the charging schedule in seconds. If the duration is left empty, the last period will continue indefinitely or until end of the transaction if chargingProfilePurpose = TxProfile.

Field Name	Field Type	Card.	Description
chargingRateUnit	ChargingRateUnitEnumType	1..1	Required. The unit of measure Limit is expressed in.
minChargingRate	decimal	0..1	Optional. Minimum charging rate supported by the EV. The unit of measure is defined by the chargingRateUnit. This parameter is intended to be used by a local smart charging algorithm to optimize the power allocation for in the case a charging process is inefficient at lower charging rates. Accepts at most one digit fraction (e.g. 8.1)
chargingSchedulePeriod	ChargingSchedulePeriodType	1..1024	Required. List of ChargingSchedulePeriod elements defining maximum power or current usage over time. The maximum number of periods, that is supported by the Charging Station, if less than 1024, is set by device model variable SmartChargingCtrlr.PeriodsPerSchedule.
salesTariff	SalesTariffType	0..1	Optional. Sales tariff associated with this charging schedule.

2.13. ChargingStationType

Class

The physical system where an Electrical Vehicle (EV) can be charged.

ChargingStationType is used by: BootNotificationRequest

Field Name	Field Type	Card.	Description
serialNumber	string[0..25]	0..1	Optional. Vendor-specific device identifier.
model	string[0..20]	1..1	Required. Defines the model of the device.
vendorName	string[0..50]	1..1	Required. Identifies the vendor (not necessarily in a unique manner).
firmwareVersion	string[0..50]	0..1	Optional. This contains the firmware version of the Charging Station.
modem	ModemType	0..1	Optional. Defines the functional parameters of a communication link.

2.14. ClearChargingProfileType

Class

A ChargingProfile consists of a ChargingSchedule, describing the amount of power or current that can be delivered per time interval.

ClearChargingProfileType is used by: ClearChargingProfileRequest

Field Name	Field Type	Card.	Description
evseId	integer	0..1	Optional. Specifies the id of the EVSE for which to clear charging profiles. An evseId of zero (0) specifies the charging profile for the overall Charging Station. Absence of this parameter means the clearing applies to all charging profiles that match the other criteria in the request.
chargingProfilePurpose	ChargingProfilePurposeEnumType	0..1	Optional. Specifies to purpose of the charging profiles that will be cleared, if they meet the other criteria in the request.
stackLevel	integer	0..1	Optional. Specifies the stackLevel for which charging profiles will be cleared, if they meet the other criteria in the request.

2.15. ClearMonitoringResultType

Class

ClearMonitoringResultType is used by: ClearVariableMonitoringResponse

Field Name	Field Type	Card.	Description
status	ClearMonitoringStatusEnumType	1..1	Required. Result of the clear request for this monitor, identified by its Id.
id	integer	1..1	Required. Id of the monitor of which a clear was requested.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

2.16. ComponentType

Class

A physical or logical component

ComponentType is used by: Common:ComponentVariableType , Common:MessageInfoType , GetVariablesRequest.GetVariableDataType , GetVariablesResponse.GetVariableResultType , NotifyMonitoringReportRequest.MonitoringDataType , NotifyReportRequest.ReportDataType , SetVariableMonitoringRequest.SetMonitoringDataType , SetVariableMonitoringResponse.SetMonitoringResultType , SetVariablesRequest.SetVariableDataType , SetVariablesResponse.SetVariableResultType , NotifyEventRequest.EventDataType

Field Name	Field Type	Card.	Description
name	identifierString[0..50]	1..1	Required. Name of the component. Name should be taken from the list of standardized component names whenever possible. Case Insensitive. strongly advised to use Camel Case.
instance	identifierString[0..50]	0..1	Optional. Name of instance in case the component exists as multiple instances. Case Insensitive. strongly advised to use Camel Case.
evse	EVSEType	0..1	Optional. Specifies the EVSE when component is located at EVSE level, also specifies the connector when component is located at Connector level.

2.17. ComponentVariableType

Class

Class to report components, variables and variable attributes and characteristics.

ComponentVariableType is used by: GetMonitoringReportRequest , GetReportRequest

Field Name	Field Type	Card.	Description
component	ComponentType	1..1	Required. Component for which a report of Variable is requested.
variable	VariableType	0..1	Optional. Variable(s) for which the report is requested.

2.18. CompositeScheduleType

Class

CompositeScheduleType is used by: GetCompositeScheduleResponse

Field Name	Field Type	Card.	Description
evseId	integer	1..1	Required. The ID of the EVSE for which the schedule is requested. When evseid=0, the Charging Station calculated the expected consumption for the grid connection.
duration	integer	1..1	Required. Duration of the schedule in seconds.
scheduleStart	dateTime	1..1	Required. Date and time at which the schedule becomes active. All time measurements within the schedule are relative to this timestamp.
chargingRateUnit	ChargingRateUnitEnumType	1..1	Required. The unit of measure Limit is expressed in.
chargingSchedulePeriod	ChargingSchedulePeriodType	1..*	Required. List of ChargingSchedulePeriod elements defining maximum power or current usage over time.

2.19. ConsumptionCostType

Class

ConsumptionCostType is used by: Common:SalesTariffEntryType

Field Name	Field Type	Card.	Description
startValue	decimal	1..1	Required. The lowest level of consumption that defines the starting point of this consumption block. The block interval extends to the start of the next interval.
cost	CostType	1..3	Required. This field contains the cost details.

2.20. CostType

Class

CostType is used by: Common:ConsumptionCostType

Field Name	Field Type	Card.	Description
costKind	CostKindEnumType	1..1	Required. The kind of cost referred to in the message element amount
amount	integer	1..1	Required. The estimated or actual cost per kWh
amountMultiplier	integer	0..1	Optional. Values: -3..3, The amountMultiplier defines the exponent to base 10 (dec). The final value is determined by: amount * 10 ^ amountMultiplier

2.21. DCChargingParametersType

Class

EV DC charging parameters

DCChargingParametersType is used by: Common:ChargingNeedsType

Field Name	Field Type	Card.	Description
evMaxCurrent	integer	1..1	Required. Maximum current (amps) supported by the electric vehicle. Includes cable capacity.
evMaxVoltage	integer	1..1	Required. Maximum voltage supported by the electric vehicle
energyAmount	integer	0..1	Optional. Amount of energy requested (in Wh). This inludes energy required for preconditioning.
evMaxPower	integer	0..1	Optional. Maximum power (in W) supported by the electric vehicle. Required for DC charging.
stateOfCharge	integer, 0 < = val < = 100	0..1	Optional. Energy available in the battery (in percent of the battery capacity)

Field Name	Field Type	Card.	Description
evEnergyCapacity	integer	0..1	Optional. Capacity of the electric vehicle battery (in Wh)
fullSoC	integer, 0 < = val < = 100	0..1	Optional. Percentage of SoC at which the EV considers the battery fully charged. (possible values: 0 - 100)
bulkSoC	integer, 0 < = val < = 100	0..1	Optional. Percentage of SoC at which the EV considers a fast charging process to end. (possible values: 0 - 100)

2.22. EventDataType

Class

Class to report an event notification for a component-variable.

EventDataType is used by: NotifyEventRequest

Field Name	Field Type	Card.	Description
eventId	integer	1..1	Required. Identifies the event. This field can be referred to as a cause by other events.
timestamp	dateTime	1..1	Required. Timestamp of the moment the report was generated.
trigger	EventTriggerEnumType	1..1	Required. Type of monitor that triggered this event, e.g. exceeding a threshold value.
cause	integer	0..1	Optional. Refers to the Id of an event that is considered to be the cause for this event.
actualValue	string[0..2500]	1..1	Required. Actual value (*attributeType* Actual) of the variable. The Configuration Variable ReportingValueSize can be used to limit GetVariableResult.attributeValue, VariableAttribute.value and EventData.actualValue. The max size of these values will always remain equal.
techCode	string[0..50]	0..1	Optional. Technical (error) code as reported by component.
techInfo	string[0..500]	0..1	Optional. Technical detail information as reported by component.
cleared	boolean	0..1	Optional. *Cleared* is set to true to report the clearing of a monitored situation, i.e. a 'return to normal'.
transactionId	identifierString[0..36]	0..1	Optional. If an event notification is linked to a specific transaction, this field can be used to specify its transactionId.
variableMonitoringId	integer	0..1	Optional. Identifies the VariableMonitoring which triggered the event.
eventNotificationType	EventNotificationEnumType	1..1	Required. Specifies the event notification type of the message.
component	ComponentType	1..1	Required. Component for which event is notified.
variable	VariableType	1..1	Required. Variable for which event is notified.

2.23. EVSEType

Class

Electric Vehicle Supply Equipment

EVSEType is used by: Common:ComponentType , TriggerMessageRequest , ChangeAvailabilityRequest , TransactionEventRequest

Field Name	Field Type	Card.	Description
id	integer	1..1	Required. EVSE Identifier. This contains a number (> 0) designating an EVSE of the Charging Station.

Field Name	Field Type	Card.	Description
connectorId	integer	0..1	Optional. An id to designate a specific connector (on an EVSE) by connector index number.

2.24. FirmwareType

Class

Represents a copy of the firmware that can be loaded/updated on the Charging Station.

FirmwareType is used by: UpdateFirmwareRequest

Field Name	Field Type	Card.	Description
location	string[0..512]	1..1	Required. URI defining the origin of the firmware.
retrieveDateTime	dateTime	1..1	Required. Date and time at which the firmware shall be retrieved.
installDateTime	dateTime	0..1	Optional. Date and time at which the firmware shall be installed.
signingCertificate	string[0..5500]	0..1	Optional. Certificate with which the firmware was signed. PEM encoded X.509 certificate.
signature	string[0..800]	0..1	Optional. Base64 encoded firmware signature.

2.25. GetVariableDataType

Class

Class to hold parameters for GetVariables request.

GetVariableDataType is used by: GetVariablesRequest

Field Name	Field Type	Card.	Description
attributeType	AttributeEnumType	0..1	Optional. Attribute type for which value is requested. When absent, default Actual is assumed.
component	ComponentType	1..1	Required. Component for which the Variable is requested.
variable	VariableType	1..1	Required. Variable for which the attribute value is requested.

2.26. GetVariableResultType

Class

Class to hold results of GetVariables request.

GetVariableResultType is used by: GetVariablesResponse

Field Name	Field Type	Card.	Description
attributeStatus	GetVariableStatusEnumType	1..1	Required. Result status of getting the variable.
attributeType	AttributeEnumType	0..1	Optional. Attribute type for which value is requested. When absent, default Actual is assumed.
attributeValue	string[0..2500]	0..1	Optional. Value of requested attribute type of component-variable. This field can only be empty when the given status is NOT accepted. The Configuration Variable ReportingValueSize can be used to limit GetVariableResult.attributeValue, VariableAttribute.value and EventData.actualValue. The max size of these values will always remain equal.
component	ComponentType	1..1	Required. Component for which the Variable is requested.

Field Name	Field Type	Card.	Description
variable	VariableType	1..1	Required. Variable for which the attribute value is requested.
attributeStatusInfo	StatusInfoType	0..1	Optional. Detailed attribute status information.

2.27. IdTokenInfoType

Class

Contains status information about an identifier. It is advised to not stop charging for a token that expires during charging, as ExpiryDate is only used for caching purposes. If ExpiryDate is not given, the status has no end date.

IdTokenInfoType is used by: Common:AuthorizationData , AuthorizeResponse , TransactionEventResponse

Field Name	Field Type	Card.	Description
status	AuthorizationStatusEnumType	1..1	Required. Current status of the ID Token.
cacheExpiryDateTime	dateTime	0..1	Optional. Date and Time after which the token must be considered invalid.
chargingPriority	integer	0..1	Optional. Priority from a business point of view. Default priority is 0, The range is from -9 to 9. Higher values indicate a higher priority. The chargingPriority in TransactionEventResponse overrules this one.
language1	string[0..8]	0..1	Optional. Preferred user interface language of identifier user. Contains a language code as defined in [RFC5646].
evseId	integer	0..*	Optional. Only used when the IdToken is only valid for one or more specific EVSEs, not for the entire Charging Station.
language2	string[0..8]	0..1	Optional. Second preferred user interface language of identifier user. Don't use when language1 is omitted, has to be different from language1. Contains a language code as defined in [RFC5646].
groupIdToken	IdTokenType	0..1	Optional. This contains the group identifier.
personalMessage	MessageContentType	0..1	Optional. Personal message that can be shown to the EV Driver and can be used for tariff information, user greetings etc.

2.28. IdTokenType

Class

Contains a case insensitive identifier to use for the authorization and the type of authorization to support multiple forms of identifiers.

IdTokenType is used by: Common:AuthorizationData , Common:IdTokenInfoType , RequestStartTransactionRequest , AuthorizeRequest , TransactionEventRequest , ReserveNowRequest , CustomerInformationRequest

Field Name	Field Type	Card.	Description
idToken	identifierString[0..36]	1..1	Required. IdToken is case insensitive. Might hold the hidden id of an RFID tag, but can for example also contain a UUID.
type	IdTokenEnumType	1..1	Required. Enumeration of possible idToken types.
additionalInfo	AdditionalInfoType	0..*	Optional. AdditionalInfo can be used to send extra information which can be validated by the CSMS in addition to the regular authorization with *IdToken*. *AdditionalInfo* contains one or more custom types, which need to be agreed upon by all parties involved. When AdditionalInfo is NOT implemented or a not supported AdditionalInfo.type is used, the CSMS/Charging Station MAY ignore the AdditionalInfo.

2.29. LogParametersType

Class

Generic class for the configuration of logging entries.

LogParametersType is used by: GetLogRequest

Field Name	Field Type	Card.	Description
remoteLocation	string[0..512]	1..1	Required. The URL of the location at the remote system where the log should be stored.
oldestTimestamp	dateTime	0..1	Optional. This contains the date and time of the oldest logging information to include in the diagnostics.
latestTimestamp	dateTime	0..1	Optional. This contains the date and time of the latest logging information to include in the diagnostics.

2.30. MessageContentType

Class

Contains message details, for a message to be displayed on a Charging Station.

MessageContentType is used by: Common:IdTokenInfoType , Common:MessageInfoType , TransactionEventResponse

Field Name	Field Type	Card.	Description
format	MessageFormatEnumType	1..1	Required. Format of the message.
language	string[0..8]	0..1	Optional. Message language identifier. Contains a language code as defined in [RFC5646].
content	string[0..512]	1..1	Required. Message contents.

2.31. MessageInfoType

Class

Contains message details, for a message to be displayed on a Charging Station.

MessageInfoType is used by: SetDisplayMessageRequest , NotifyDisplayMessagesRequest

Field Name	Field Type	Card.	Description
id	integer	1..1	Required. Master resource identifier, unique within an exchange context. It is defined within the OCPP context as a positive Integer value (greater or equal to zero).
priority	MessagePriorityEnumType	1..1	Required. With what priority should this message be shown
state	MessageStateEnumType	0..1	Optional. During what state should this message be shown. When omitted this message should be shown in any state of the Charging Station.
startDateTime	dateTime	0..1	Optional. From what date-time should this message be shown. If omitted: directly.
endDateTime	dateTime	0..1	Optional. Until what date-time should this message be shown, after this date/time this message SHALL be removed.
transactionId	identifierString[0..36]	0..1	Optional. During which transaction shall this message be shown. Message SHALL be removed by the Charging Station after transaction has ended.
message	MessageContentType	1..1	Required. Contains message details for the message to be displayed on a Charging Station.

Field Name	Field Type	Card.	Description
display	ComponentType	0..1	Optional. When a Charging Station has multiple Displays, this field can be used to define to which Display this message belongs.

2.32. MeterValueType

Class

Collection of one or more sampled values in MeterValuesRequest and TransactionEvent. All sampled values in a MeterValue are sampled at the same point in time.

MeterValueType is used by: MeterValuesRequest , TransactionEventRequest

Field Name	Field Type	Card.	Description
timestamp	dateTime	1..1	Required. Timestamp for measured value(s).
sampledValue	SampledValueType	1..*	Required. One or more measured values

2.33. ModemType

Class

Defines parameters required for initiating and maintaining wireless communication with other devices.

ModemType is used by: BootNotificationRequest.ChargingStationType

Field Name	Field Type	Card.	Description
iccid	identifierString[0..20]	0..1	Optional. This contains the ICCID of the modem's SIM card.
imsi	identifierString[0..20]	0..1	Optional. This contains the IMSI of the modem's SIM card.

2.34. MonitoringDataType

Class

Class to hold parameters of SetVariableMonitoring request.

MonitoringDataType is used by: NotifyMonitoringReportRequest

Field Name	Field Type	Card.	Description
component	ComponentType	1..1	Required. Component for which monitoring report was requested.
variable	VariableType	1..1	Required. Variable for which monitoring report was requested.
variableMonitoring	VariableMonitoringType	1..*	Required. List of monitors for this Component-Variable pair.

2.35. NetworkConnectionProfileType

Class

The NetworkConnectionProfile defines the functional and technical parameters of a communication link.

NetworkConnectionProfileType is used by: SetNetworkProfileRequest

Field Name	Field Type	Card.	Description
ocppVersion	OCPPVersionEnumType	1..1	Required. Defines the OCPP version used for this communication function.
ocppTransport	OCPPTransportEnumType	1..1	Required. Defines the transport protocol (e.g. SOAP or JSON). Note: SOAP is not supported in OCPP 2.0, but is supported by other versions of OCPP.
ocppCsmsUrl	string[0..512]	1..1	Required. URL of the CSMS(s) that this Charging Station communicates with.
messageTimeout	integer	1..1	Required. Duration in seconds before a message send by the Charging Station via this network connection times-out. The best setting depends on the underlying network and response times of the CSMS. If you are looking for a some guideline: use 30 seconds as a starting point.
securityProfile	integer	1..1	Required. This field specifies the security profile used when connecting to the CSMS with this NetworkConnectionProfile.
ocppInterface	OCPPInterfaceEnumType	1..1	Required. Applicable Network Interface.
vpn	VPNType	0..1	Optional. Settings to be used to set up the VPN connection
apn	APNType	0..1	Optional. Collection of configuration data needed to make a data-connection over a cellular network.

2.36. OCSPRequestDataType

Class

OCSPRequestDataType is used by: AuthorizeRequest , GetCertificateStatusRequest

Field Name	Field Type	Card.	Description
hashAlgorithm	HashAlgorithmEnumType	1..1	Required. Used algorithms for the hashes provided.
issuerNameHash	identifierString[0..128]	1..1	Required. Hashed value of the Issuer DN (Distinguished Name).
issuerKeyHash	string[0..128]	1..1	Required. Hashed value of the issuers public key
serialNumber	identifierString[0..40]	1..1	Required. The serial number of the certificate.
responderURL	string[0..512]	1..1	Required. This contains the responder URL (Case insensitive).

2.37. RelativeTimeIntervalType

Class

RelativeTimeIntervalType is used by: Common:SalesTariffEntryType

Field Name	Field Type	Card.	Description
start	integer	1..1	Required. Start of the interval, in seconds from NOW.
duration	integer	0..1	Optional. Duration of the interval, in seconds.

2.38. ReportDataType

Class

Class to report components, variables and variable attributes and characteristics.

ReportDataType is used by: NotifyReportRequest

Field Name	Field Type	Card.	Description
component	ComponentType	1..1	Required. Component for which a report of Variable is requested.

Field Name	Field Type	Card.	Description
variable	VariableType	1..1	Required. Variable for which report is requested.
variableAttribute	VariableAttributeType	1..4	Required. Attribute data of a variable.
variableCharacteristics	VariableCharacteristicsType	0..1	Optional. Fixed read-only parameters of a variable.

2.39. SalesTariffEntryType

Class

SalesTariffEntryType is used by: Common:SalesTariffType

Field Name	Field Type	Card.	Description
ePriceLevel	integer, 0 < = val	0..1	Optional. Defines the price level of this SalesTariffEntry (referring to NumEPriceLevels). Small values for the EPriceLevel represent a cheaper TariffEntry. Large values for the EPriceLevel represent a more expensive TariffEntry.
relativeTimeInterval	RelativeTimeIntervalType	1..1	Required. Defines the time interval the SalesTariffEntry is valid for, based upon relative times.
consumptionCost	ConsumptionCostType	0..3	Optional. Defines additional means for further relative price information and/or alternative costs.

2.40. SalesTariffType

Class

NOTE This dataType is based on dataTypes from ISO 15118-2.

SalesTariffType is used by: Common:ChargingScheduleType

Field Name	Field Type	Card.	Description
id	integer	1..1	Required. SalesTariff identifier used to identify one sales tariff. An SAID remains a unique identifier for one schedule throughout a charging session.
salesTariffDescription	string[0..32]	0..1	Optional. A human readable title/short description of the sales tariff e.g. for HMI display purposes.
numEPriceLevels	integer	0..1	Optional. Defines the overall number of distinct price levels used across all provided SalesTariff elements.
salesTariffEntry	SalesTariffEntryType	1..1024	Required. Encapsulating element describing all relevant details for one time interval of the SalesTariff. The number of SalesTariffEntry elements is limited by the parameter maxScheduleTuples.

2.41. SampledValueType

Class

Single sampled value in MeterValues. Each value can be accompanied by optional fields.

To save on mobile data usage, default values of all of the optional fields are such that. The value without any additional fields will be interpreted, as a register reading of active import energy in Wh (Watt-hour) units.

SampledValueType is used by: Common:MeterValueType

Field Name	Field Type	Card.	Description
value	decimal	1..1	Required. Indicates the measured value.
context	ReadingContextEnumType	0..1	Optional. Type of detail value: start, end or sample. Default = "Sample.Periodic"

Field Name	Field Type	Card.	Description
measurand	MeasurandEnumType	0..1	Optional. Type of measurement. Default = "Energy.Active.Import.Register"
phase	PhaseEnumType	0..1	Optional. Indicates how the measured value is to be interpreted. For instance between L1 and neutral (L1-N) Please note that not all values of phase are applicable to all Measurands. When phase is absent, the measured value is interpreted as an overall value.
location	LocationEnumType	0..1	Optional. Indicates where the measured value has been sampled. Default = "Outlet"
signedMeterValue	SignedMeterValueType	0..1	Optional. Contains the MeterValueSignature with sign/encoding method information.
unitOfMeasure	UnitOfMeasureType	0..1	Optional. Represents a UnitOfMeasure including a multiplier

2.42. SetMonitoringDataType

Class

Class to hold parameters of SetVariableMonitoring request.

SetMonitoringDataType is used by: SetVariableMonitoringRequest

Field Name	Field Type	Card.	Description
id	integer	0..1	Optional. An id SHALL only be given to replace an existing monitor. The Charging Station handles the generation of id's for new monitors.
transaction	boolean	0..1	Optional. Monitor only active when a transaction is ongoing on a component relevant to this transaction. Default = false.
value	decimal	1..1	Required. Value for threshold or delta monitoring. For Periodic or PeriodicClockAligned this is the interval in seconds.
type	MonitorEnumType	1..1	Required. The type of this monitor, e.g. a threshold, delta or periodic monitor.

Field Name	Field Type	Card.	Description
severity	integer	1..1	Required. The severity that will be assigned to an event that is triggered by this monitor. The severity range is 0-9, with 0 as the highest and 9 as the lowest severity level. The severity levels have the following meaning: **0-Danger** Indicates lives are potentially in danger. Urgent attention is needed and action should be taken immediately. **1-Hardware Failure** Indicates that the Charging Station is unable to continue regular operations due to Hardware issues. Action is required. **2-System Failure** Indicates that the Charging Station is unable to continue regular operations due to software or minor hardware issues. Action is required. **3-Critical** Indicates a critical error. Action is required. **4-Error** Indicates a non-urgent error. Action is required. **5-Alert** Indicates an alert event. Default severity for any type of monitoring event. **6-Warning** Indicates a warning event. Action may be required. **7-Notice** Indicates an unusual event. No immediate action is required. **8-Informational** Indicates a regular operational event. May be used for reporting, measuring throughput, etc. No action is required. **9-Debug** Indicates information useful to developers for debugging, not useful during operations.
component	ComponentType	1..1	Required. Component for which monitor is set.
variable	VariableType	1..1	Required. Variable for which monitor is set.

2.43. SetMonitoringResultType

Class

Class to hold result of SetVariableMonitoring request.

SetMonitoringResultType is used by: SetVariableMonitoringResponse

Field Name	Field Type	Card.	Description
id	integer	0..1	Optional. Id given to the VariableMonitor by the Charging Station. The Id is only returned when status is accepted. Installed VariableMonitors should have unique id's but the id's of removed Installed monitors should have unique id's but the id's of removed monitors MAY be reused.
status	SetMonitoringStatusEnumType	1..1	Required. Status is OK if a value could be returned. Otherwise this will indicate the reason why a value could not be returned.
type	MonitorEnumType	1..1	Required. The type of this monitor, e.g. a threshold, delta or periodic monitor.

Field Name	Field Type	Card.	Description
severity	integer	1..1	Required. The severity that will be assigned to an event that is triggered by this monitor. The severity range is 0-9, with 0 as the highest and 9 as the lowest severity level. The severity levels have the following meaning: **0-Danger** Indicates lives are potentially in danger. Urgent attention is needed and action should be taken immediately. **1-Hardware Failure** Indicates that the Charging Station is unable to continue regular operations due to Hardware issues. Action is required. **2-System Failure** Indicates that the Charging Station is unable to continue regular operations due to software or minor hardware issues. Action is required. **3-Critical** Indicates a critical error. Action is required. **4-Error** Indicates a non-urgent error. Action is required. **5-Alert** Indicates an alert event. Default severity for any type of monitoring event. **6-Warning** Indicates a warning event. Action may be required. **7-Notice** Indicates an unusual event. No immediate action is required. **8-Informational** Indicates a regular operational event. May be used for reporting, measuring throughput, etc. No action is required. **9-Debug** Indicates information useful to developers for debugging, not useful during operations.
component	ComponentType	1..1	Required. Component for which status is returned.
variable	VariableType	1..1	Required. Variable for which status is returned.
statusInfo	StatusInfoType	0..1	Optional. Detailed status information.

2.44. SetVariableDataType

Class

SetVariableDataType is used by: SetVariablesRequest

Field Name	Field Type	Card.	Description
attributeType	AttributeEnumType	0..1	Optional. Type of attribute: Actual, Target, MinSet, MaxSet. Default is Actual when omitted.
attributeValue	string[0..1000]	1..1	Required. Value to be assigned to attribute of variable. The Configuration Variable ConfigurationValueSize can be used to limit SetVariableData.attributeValue and VariableCharacteristics.valueList. The max size of these values will always remain equal.
component	ComponentType	1..1	Required. The component for which the variable data is set.
variable	VariableType	1..1	Required. Specifies the that needs to be set.

2.45. SetVariableResultType

Class

SetVariableResultType is used by: SetVariablesResponse

Field Name	Field Type	Card.	Description
attributeType	AttributeEnumType	0..1	Optional. Type of attribute: Actual, Target, MinSet, MaxSet. Default is Actual when omitted.
attributeStatus	SetVariableStatusEnumType	1..1	Required. Result status of setting the variable.
component	ComponentType	1..1	Required. The component for which result is returned.
variable	VariableType	1..1	Required. The variable for which the result is returned.
attributeStatusInfo	StatusInfoType	0..1	Optional. Detailed attribute status information.

2.46. SignedMeterValueType

Class

Represent a signed version of the meter value.

SignedMeterValueType is used by: Common:SampledValueType

Field Name	Field Type	Card.	Description
signedMeterData	string[0..2500]	1..1	Required. Base64 encoded, contains the signed data which might contain more then just the meter value. It can contain information like timestamps, reference to a customer etc.
signingMethod	string[0..50]	1..1	Required. Method used to create the digital signature.
encodingMethod	string[0..50]	1..1	Required. Method used to encode the meter values before applying the digital signature algorithm.
publicKey	string[0..2500]	1..1	Required. Base64 encoded, sending depends on configuration variable *PublicKeyWithSignedMeterValue*.

2.47. StatusInfoType

Class

Element providing more information about the status.

StatusInfoType is used by: Common:ClearMonitoringResultType , BootNotificationResponse , CancelReservationResponse , TriggerMessageResponse , UnlockConnectorResponse , UpdateFirmwareResponse , ClearDisplayMessageResponse , Get15118EVCertificateResponse , GetCompositeScheduleResponse , ChangeAvailabilityResponse , GetLogResponse , ClearChargingProfileResponse , NotifyEVChargingNeedsResponse , ClearCacheResponse , NotifyEVChargingScheduleResponse , RequestStartTransactionResponse , RequestStopTransactionResponse , SetChargingProfileResponse , SetDisplayMessageResponse , SetNetworkProfileResponse , SignCertificateResponse , DataTransferResponse , CertificateSignedResponse , DeleteCertificateResponse , GetChargingProfilesResponse , GetInstalledCertificateIdsResponse , InstallCertificateResponse , GetBaseReportResponse , GetMonitoringReportResponse , GetReportResponse , GetVariablesResponse.GetVariableResultType , ReserveNowResponse , SetMonitoringBaseResponse , SetMonitoringLevelResponse , SetVariableMonitoringResponse.SetMonitoringResultType , SetVariablesResponse.SetVariableResultType , PublishFirmwareResponse , GetCertificateStatusResponse , ResetResponse , GetDisplayMessagesResponse , CustomerInformationResponse , SendLocalListResponse

Field Name	Field Type	Card.	Description
reasonCode	string[0..20]	1..1	Required. A predefined code for the reason why the status is returned in this response. The string is case-insensitive.
additionalInfo	string[0..512]	0..1	Optional. Additional text to provide detailed information.

2.48. TransactionType

Class

TransactionType is used by: TransactionEventRequest

Field Name	Field Type	Card.	Description
transactionId	identifierString[0..36]	1..1	Required. This contains the Id of the transaction.
chargingState	ChargingStateEnumType	0..1	Optional. Current charging state, is required when state has changed.
timeSpentCharging	integer	0..1	Optional. Contains the total time that energy flowed from EVSE to EV during the transaction (in seconds). Note that timeSpentCharging is smaller or equal to the duration of the transaction.
stoppedReason	ReasonEnumType	0..1	Optional. This contains the reason why the transaction was stopped. MAY only be omitted when Reason is "Local".
remoteStartId	integer	0..1	Optional. The ID given to remote start request (RequestStartTransactionRequest. This enables to CSMS to match the started transaction to the given start request.

2.49. UnitOfMeasureType

Class

Represents a UnitOfMeasure with a multiplier

UnitOfMeasureType is used by: Common:SampledValueType

Field Name	Field Type	Card.	Description
unit	string[0..20]	0..1	Optional. Unit of the value. Default = "Wh" if the (default) measurand is an "Energy" type. This field SHALL use a value from the list Standardized Units of Measurements in Part 2 Appendices. If an applicable unit is available in that list, otherwise a "custom" unit might be used.
multiplier	integer	0..1	Optional. Multiplier, this value represents the exponent to base 10. I.e. multiplier 3 means 10 raised to the 3rd power. Default is 0.

2.50. VariableAttributeType

Class

Attribute data of a variable.

VariableAttributeType is used by: NotifyReportRequest.ReportDataType

Field Name	Field Type	Card.	Description
type	AttributeEnumType	0..1	Optional. Attribute: Actual, MinSet, MaxSet, etc. Defaults to Actual if absent.
value	string[0..2500]	0..1	Optional. Value of the attribute. May only be omitted when mutability is set to 'WriteOnly'. The Configuration Variable ReportingValueSize can be used to limit GetVariableResult.attributeValue, VariableAttribute.value and EventData.actualValue. The max size of these values will always remain equal.
mutability	MutabilityEnumType	0..1	Optional. Defines the mutability of this attribute. Default is ReadWrite when omitted.

Field Name	Field Type	Card.	Description
persistent	boolean	0..1	Optional. If true, value will be persistent across system reboots or power down. Default when omitted is false.
constant	boolean	0..1	Optional. If true, value that will never be changed by the Charging Station at runtime. Default when omitted is false.

2.51. VariableCharacteristicsType

Class

Fixed read-only parameters of a variable.

VariableCharacteristicsType is used by: NotifyReportRequest.ReportDataType

Field Name	Field Type	Card.	Description
unit	string[0..16]	0..1	Optional. Unit of the variable. When the transmitted value has a unit, this field SHALL be included.
dataType	DataEnumType	1..1	Required. Data type of this variable.
minLimit	decimal	0..1	Optional. Minimum possible value of this variable.
maxLimit	decimal	0..1	Optional. Maximum possible value of this variable. When the datatype of this Variable is String, OptionList, SequenceList or MemberList, this field defines the maximum length of the (CSV) string.
valuesList	string[0..1000]	0..1	Optional. Allowed values when variable is Option/Member/SequenceList. * OptionList: The (Actual) Variable value must be a single value from the reported (CSV) enumeration list. * MemberList: The (Actual) Variable value may be an (unordered) (sub-)set of the reported (CSV) valid values list. * SequenceList: The (Actual) Variable value may be an ordered (priority, etc) (sub-)set of the reported (CSV) valid values. This is a comma separated list. The Configuration Variable ConfigurationValueSize can be used to limit SetVariableData.attributeValue and VariableCharacteristics.valueList. The max size of these values will always remain equal.
supportsMonitoring	boolean	1..1	Required. Flag indicating if this variable supports monitoring.

2.52. VariableMonitoringType

Class

A monitoring setting for a variable.

VariableMonitoringType is used by: NotifyMonitoringReportRequest.MonitoringDataType

Field Name	Field Type	Card.	Description
id	integer	1..1	Required. Identifies the monitor.
transaction	boolean	1..1	Required. Monitor only active when a transaction is ongoing on a component relevant to this transaction.

Field Name	Field Type	Card.	Description
value	decimal	1..1	Required. Value for threshold or delta monitoring. For Periodic or PeriodicClockAligned this is the interval in seconds.
type	MonitorEnumType	1..1	Required. The type of this monitor, e.g. a threshold, delta or periodic monitor.
severity	integer	1..1	Required. The severity that will be assigned to an event that is triggered by this monitor. The severity range is 0-9, with 0 as the highest and 9 as the lowest severity level. The severity levels have the following meaning: **0-Danger** Indicates lives are potentially in danger. Urgent attention is needed and action should be taken immediately. **1-Hardware Failure** Indicates that the Charging Station is unable to continue regular operations due to Hardware issues. Action is required. **2-System Failure** Indicates that the Charging Station is unable to continue regular operations due to software or minor hardware issues. Action is required. **3-Critical** Indicates a critical error. Action is required. **4-Error** Indicates a non-urgent error. Action is required. **5-Alert** Indicates an alert event. Default severity for any type of monitoring event. **6-Warning** Indicates a warning event. Action may be required. **7-Notice** Indicates an unusual event. No immediate action is required. **8-Informational** Indicates a regular operational event. May be used for reporting, measuring throughput, etc. No action is required. **9-Debug** Indicates information useful to developers for debugging, not useful during operations.

2.53. VariableType

Class

Reference key to a component-variable.

VariableType is used by: Common:ComponentVariableType , GetVariablesRequest.GetVariableDataType , GetVariablesResponse.GetVariableResultType , NotifyMonitoringReportRequest.MonitoringDataType , NotifyReportRequest.ReportDataType , SetVariableMonitoringRequest.SetMonitoringDataType , SetVariableMonitoringResponse.SetMonitoringResultType , SetVariablesRequest.SetVariableDataType , SetVariablesResponse.SetVariableResultType , NotifyEventRequest.EventDataType

Field Name	Field Type	Card.	Description
name	identifierString[0..50]	1..1	Required. Name of the variable. Name should be taken from the list of standardized variable names whenever possible. Case Insensitive. strongly advised to use Camel Case.

Field Name	Field Type	Card.	Description
instance	identifierString[0..50]	0..1	Optional. Name of instance in case the variable exists as multiple instances. Case Insensitive. strongly advised to use Camel Case.

2.54. VPNType

Class

VPN Configuration settings

VPNType is used by: SetNetworkProfileRequest.NetworkConnectionProfileType

Field Name	Field Type	Card.	Description
server	string[0..512]	1..1	Required. VPN Server Address
user	string[0..20]	1..1	Required. VPN User
group	string[0..20]	0..1	Optional. VPN group.
password	string[0..20]	1..1	Required. VPN Password.
key	string[0..255]	1..1	Required. VPN shared secret.
type	VPNEnumType	1..1	Required. Type of VPN

3. Enumerations

3.1. APNAuthenticationEnumType

Enumeration

APNAuthenticationEnumType is used by: setNetworkProfile:SetNetworkProfileRequest.APNType

Value	Description
CHAP	Use CHAP authentication
NONE	Use no authentication
PAP	Use PAP authentication
AUTO	Sequentially try CHAP, PAP, NONE.

3.2. AttributeEnumType

Enumeration

AttributeEnumType is used by: Common:VariableAttributeType , getVariables:GetVariablesRequest.GetVariableDataType , getVariables:GetVariablesResponse.GetVariableResultType , setVariables:SetVariablesRequest.SetVariableDataType , setVariables:SetVariablesResponse.SetVariableResultType

Value	Description
Actual	The actual value of the variable.
Target	The target value for this variable.
MinSet	The minimal allowed value for this variable
MaxSet	Thne maximum allowed value for this variable

3.3. AuthorizationStatusEnumType

Enumeration

Status of an authorization response.

AuthorizationStatusEnumType is used by: Common:IdTokenInfoType

Value	Description
Accepted	Identifier is allowed for charging.
Blocked	Identifier has been blocked. Not allowed for charging.
ConcurrentTx	Identifier is already involved in another transaction and multiple transactions are not allowed. (Only relevant for the response to a transactionEventRequest(eventType=Started).)
Expired	Identifier has expired. Not allowed for charging.
Invalid	Identifier is invalid. Not allowed for charging.
NoCredit	Identifier is valid, but EV Driver doesn't have enough credit to start charging. Not allowed for charging.
NotAllowedTypeEVSE	Identifier is valid, but not allowed to charge at this type of EVSE.
NotAtThisLocation	Identifier is valid, but not allowed to charge at this location.
NotAtThisTime	Identifier is valid, but not allowed to charge at this location at this time.
Unknown	Identifier is unknown. Not allowed for charging.

3.4. AuthorizeCertificateStatusEnumType

Enumeration

Status of the EV Contract certificate.

AuthorizeCertificateStatusEnumType is used by: authorize:AuthorizeResponse

Value	Description
Accepted	Positive response
SignatureError	If the validation of the Security element in the message header failed.
CertificateExpired	If the OEMProvisioningCert in the CertificateInstallationReq, the Contract Certificate in the CertificateUpdateReq, or the ContractCertificate in the PaymentDetailsReq is expired.
CertificateRevoked	Used when the SECC or CSMS matches the ContractCertificate contained in a CertificateUpdateReq or PaymentDetailsReq with a CRL and the Contract Certificate is marked as revoked, OR when the SECC or CSMS matches the OEM Provisioning Certificate contained in a CertificateInstallationReq with a CRL and the OEM Provisioning Certificate is marked as revoked. The revocation status can alternatively be obtained through an OCSP responder.
NoCertificateAvailable	If the new certificate cannot be retrieved from secondary actor within the specified timeout
CertChainError	If the ContractSignatureCertChain contained in the CertificateInstallationReq message is not valid.
ContractCancelled	If the EMAID provided by EVCC during CertificateUpdateReq is not accepted by secondary actor.

3.5. BootReasonEnumType

Enumeration

BootReasonEnumType is used by: bootNotification:BootNotificationRequest

Value	Description
ApplicationReset	The Charging Station rebooted due to an application error.
FirmwareUpdate	The Charging Station rebooted due to a firmware update.
LocalReset	The Charging Station rebooted due to a local reset command.
PowerUp	The Charging Station powered up and registers itself with the CSMS.
RemoteReset	The Charging Station rebooted due to a remote reset command.
ScheduledReset	The Charging Station rebooted due to a scheduled reset command.
Triggered	Requested by the CSMS via a TriggerMessage
Unknown	The boot reason is unknown.
Watchdog	The Charging Station rebooted due to an elapsed watchdog timer.

3.6. CancelReservationStatusEnumType

Enumeration

Status in CancelReservationResponse.

CancelReservationStatusEnumType is used by: cancelReservation:CancelReservationResponse

Value	Description
Accepted	Reservation for the identifier has been canceled.
Rejected	Reservation could not be canceled, because there is no reservation active for the identifier.

3.7. CertificateActionEnumType

Enumeration

CertificateActionEnumType is used by: get15118EVCertificate:Get15118EVCertificateRequest

Value	Description
Install	Install the provided certificate.

Value	Description
Update	Update the provided certificate.

3.8. CertificateSignedStatusEnumType

Enumeration

CertificateSignedStatusEnumType is used by: certificateSigned:CertificateSignedResponse

Value	Description
Accepted	Signed certificate is valid.
Rejected	Signed certificate is invalid.

3.9. CertificateSigningUseEnumType

Enumeration

CertificateSigningUseEnumType is used by: signCertificate:SignCertificateRequest , certificateSigned:CertificateSignedRequest

Value	Description
ChargingStationCertificate	Client side certificate used by the Charging Station to connect the the CSMS.
V2GCertificate	Use for certificate for 15118 connections. This means that the certificate should be derived from the V2G root.

3.10. ChangeAvailabilityStatusEnumType

Enumeration

Status returned in response to ChangeAvailabilityRequest.

ChangeAvailabilityStatusEnumType is used by: changeAvailability:ChangeAvailabilityResponse

Value	Description
Accepted	Request has been accepted and will be executed.
Rejected	Request has not been accepted and will not be executed.
Scheduled	Request has been accepted and will be executed when transaction(s) in progress have finished.

3.11. ChargingLimitSourceEnumType

Enumeration

Enumeration for indicating from which source a charging limit originates.

ChargingLimitSourceEnumType is used by: notifyChargingLimit:NotifyChargingLimitRequest.ChargingLimitType , clearedChargingLimit:ClearedChargingLimitRequest , getChargingProfiles:GetChargingProfilesRequest.ChargingProfileCriterionType , reportChargingProfiles:ReportChargingProfilesRequest

Value	Description
EMS	Indicates that an Energy Management System has sent a charging limit.
Other	Indicates that an external source, not being an EMS or system operator, has sent a charging limit.
SO	Indicates that a System Operator (DSO or TSO) has sent a charging limit.
CSO	Indicates that the CSO has set this charging profile.

3.12. ChargingProfileKindEnumType

Enumeration

Kind of charging profile.

ChargingProfileKindEnumType is used by: Common:ChargingProfileType

Value	Description
Absolute	Schedule periods are relative to a fixed point in time defined in the schedule. This requires that *startSchedule* is set to a starting point in time.
Recurring	The schedule restarts periodically at the first schedule period. To be most useful, this requires that *startSchedule* is set to a starting point in time.
Relative	Charging schedule periods start when ChargingProfile is activated. In most cases this will be at start of the power delivery. When a ChargingProfile is received for a transaction in progress, then it should activate immediately. No value for *startSchedule* should be supplied.

3.13. ChargingProfilePurposeEnumType

Enumeration

Purpose of the charging profile.

ChargingProfilePurposeEnumType is used by: Common:ChargingProfileType , clearChargingProfile:ClearChargingProfileRequest.ClearChargingProfileType , getChargingProfiles:GetChargingProfilesRequest.ChargingProfileCriterionType

Value	Description
ChargingStationExternalConstraints	Additional constraints that will be incorporated into a local power schedule. Only valid for a Charging Station. Therefore evse.Id MUST be 0 in the SetChargingProfileRequest message.
ChargingStationMaxProfile	Configuration for the maximum power or current available for an entire Charging Station.
TxDefaultProfile	Default profile that can be configured in the Charging Station. When a new transaction is started, this profile SHALL be used, unless it was a transaction that was started by a RequestStartTransactionRequest with a ChargingProfile that is accepted by the Charging Station.
TxProfile	Profile with constraints to be imposed by the Charging Station on the current transaction, or on a new transaction when this is started via a RequestStartTransactionRequest with a ChargingProfile. A profile with this purpose SHALL cease to be valid when the transaction terminates.

3.14. ChargingProfileStatusEnumType

Enumeration

Status returned in response to SetChargingProfileRequest.

ChargingProfileStatusEnumType is used by: setChargingProfile:SetChargingProfileResponse

Value	Description
Accepted	Request has been accepted and will be executed.
Rejected	Request has not been accepted and will not be executed.

3.15. ChargingRateUnitEnumType

Enumeration

Unit in which a charging schedule is defined.

ChargingRateUnitEnumType is used by: Common:ChargingScheduleType , Common:CompositeScheduleType , getCompositeSchedule:GetCompositeScheduleRequest

Value	Description
W	Watts (power). This is the TOTAL allowed charging power. If used for AC Charging, the phase current should be calculated via: Current per phase = Power / (Line Voltage * Number of Phases). The "Line Voltage" used in the calculation is not the measured voltage, but the set voltage for the area (hence, 230 of 110 volt). The "Number of Phases" is the numberPhases from the ChargingSchedulePeriod. It is usually more convenient to use this for DC charging. Note that if numberPhases in a ChargingSchedulePeriod is absent, 3 SHALL be assumed.
A	Amperes (current). The amount of Ampere per phase, not the sum of all phases. It is usually more convenient to use this for AC charging.

3.16. ChargingStateEnumType

Enumeration

The state of the charging process.

ChargingStateEnumType is used by: transactionEvent:TransactionEventRequest.TransactionType

Value	Description
Charging	The contactor of the Connector is closed and energy is flowing to between EVSE and EV.
EVConnected	There is a connection between EV and EVSE, in case the protocol used between EV and the Charging Station can detect a connection, the protocol needs to detect this for the state to become active. The connection can either be wired or wireless.
SuspendedEV	When the EV is connected to the EVSE and the EVSE is offering energy but the EV is not taking any energy.
SuspendedEVSE	When the EV is connected to the EVSE but the EVSE is not offering energy to the EV, e.g. due to a smart charging restriction, local supply power constraints, or when charging has stopped because of the authorization status in the response to a transactionEventRequest indicating that charging is not allowed etc.
Idle	There is no connection between EV and EVSE.

3.17. ClearCacheStatusEnumType

Enumeration

Status returned in response to ClearCacheRequest.

ClearCacheStatusEnumType is used by: clearCache:ClearCacheResponse

Value	Description
Accepted	Command has been executed.
Rejected	Command has not been executed.

3.18. ClearChargingProfileStatusEnumType

Enumeration

Status returned in response to ClearChargingProfileRequest.

ClearChargingProfileStatusEnumType is used by: clearChargingProfile:ClearChargingProfileResponse

Value	Description
Accepted	Request has been accepted and will be executed.
Unknown	No Charging Profile(s) were found matching the request.

3.19. ClearMessageStatusEnumType

Enumeration

Result for a ClearDisplayMessageRequest as used in a ClearDisplayMessageResponse.

ClearMessageStatusEnumType is used by: clearDisplayMessage:ClearDisplayMessageResponse

Value	Description
Accepted	Request successfully executed: message cleared.
Unknown	Given message (based on the id) not known.

3.20. ClearMonitoringStatusEnumType

Enumeration

ClearMonitoringStatusEnumType is used by: Common:ClearMonitoringResultType

Value	Description
Accepted	Monitor successfully cleared.
Rejected	Clearing of monitor rejected.
NotFound	Monitor Id is not found.

3.21. ComponentCriterionEnumType

Enumeration

ComponentCriterionEnumType is used by: getReport:GetReportRequest

Value	Description
Active	Components that are active, i.e. having *Active* = 1
Available	Components that are available, i.e. having *Available* = 1
Enabled	Components that are enabled, i.e. having *Enabled* = 1
Problem	Components that reported a problem, i.e. having *Problem* = 1

3.22. ConnectorEnumType

Enumeration

Allowed values of ConnectorCode.

NOTE

This enumeration does not attempt to include every possible power connector type worldwide as an individual type, but to specifically define those that are known to be in use (or likely to be in use) in the Charging Stations using the OCPP protocol. In particular, many of the very large number of domestic electrical sockets designs in use in many countries are excluded, unless there is evidence that they are or are likely to be approved for use on Charging Stations in some jurisdictions (e.g. as secondary connectors for charging light EVs such as electric scooters). These light connector types can be represented with the enumeration value Other1PhMax16A. Similarly, any single phase connector not otherwise enumerated that is rated for 16A or over should be reported as Other1PhOver16A. All 3 phase connector types not explicitly enumerated should be represented as Other3Ph.

ConnectorEnumType is used by: reserveNow:ReserveNowRequest

Value	Description
cCCS1	Combined Charging System 1 (captive cabled) a.k.a. Combo 1
cCCS2	Combined Charging System 2 (captive cabled) a.k.a. Combo 2
cG105	JARI G105-1993 (captive cabled) a.k.a. CHAdeMO
cTesla	Tesla Connector (captive cabled)
cType1	IEC62196-2 Type 1 connector (captive cabled) a.k.a. J1772
cType2	IEC62196-2 Type 2 connector (captive cabled) a.k.a. Mennekes connector
s309-1P-16A	16A 1 phase IEC60309 socket

Value	Description
s309-1P-32A	32A 1 phase IEC60309 socket
s309-3P-16A	16A 3 phase IEC60309 socket
s309-3P-32A	32A 3 phase IEC60309 socket
sBS1361	UK domestic socket a.k.a. 13Amp
sCEE-7-7	CEE 7/7 16A socket. May represent 7/4 & 7/5 a.k.a Schuko
sType2	IEC62196-2 Type 2 socket a.k.a. Mennekes connector
sType3	IEC62196-2 Type 2 socket a.k.a. Scame
Other1PhMax16A	Other single phase (domestic) sockets not mentioned above, rated at no more than 16A. CEE7/17, AS3112, NEMA 5-15, NEMA 5-20, JISC8303, TIS166, SI 32, CPCS-CCC, SEV1011, etc.
Other1PhOver16A	Other single phase sockets not mentioned above (over 16A)
Other3Ph	Other 3 phase sockets not mentioned above. NEMA14-30, NEMA14-50.
Pan	Pantograph connector
wInductive	Wireless inductively coupled connection (generic)
wResonant	Wireless resonant coupled connection (generic)
Undetermined	Yet to be determined (e.g. before plugged in)
Unknown	Unknown; not determinable

3.23. ConnectorStatusEnumType

Enumeration

A status can be reported for the Connector of an EVSE of a Charging Station. States considered Operative are: Available, Reserved and Occupied. States considered Inoperative are: Unavailable, Faulted.

ConnectorStatusEnumType is used by: statusNotification:StatusNotificationRequest

Value	Description
Available	When a Connector becomes available for a new User (Operative)
Occupied	When a Connector becomes occupied, so it is not available for a new EV driver. (Operative)
Reserved	When a Connector becomes reserved as a result of ReserveNow command (Operative)
Unavailable	When a Connector becomes unavailable as the result of a Change Availability command or an event upon which the Charging Station transitions to unavailable at its discretion. Upon receipt of ChangeAvailability message command, the status MAY change immediately or the change MAY be scheduled. When scheduled, StatusNotification SHALL be send when the availability change becomes effective (Inoperative)
Faulted	When a Connector (or the EVSE or the entire Charging Station it belongs to) has reported an error and is not available for energy delivery. (Inoperative).

3.24. CostKindEnumType

Enumeration

CostKindEnumType is used by: Common:CostType

Value	Description
CarbonDioxideEmission	Absolute value. Carbon Dioxide emissions, in grams per kWh.
RelativePricePercentage	Relative value. Price per kWh, as percentage relative to the maximum price stated in any of all tariffs indicated to the EV.
RenewableGenerationPercentage	Relative value. Percentage of renewable generation within total generation.

3.25. CustomerInformationStatusEnumType

Enumeration

Status in CancelReservationResponse.

CustomerInformationStatusEnumType is used by: customerInformation:CustomerInformationResponse

Value	Description
Accepted	The Charging Station accepted the message.
Rejected	When the Charging Station is in a state where it cannot process this request.
Invalid	In a request to the Charging Station no reference to a customer is included.

3.26. DataEnumType

Enumeration

DataEnumType is used by: Common:VariableCharacteristicsType

Value	Description
string	This variable is of the type string.
decimal	This variable is of the type decimal.
integer	This variable is of the type integer.
dateTime	DateTime following the [RFC3339] specification.
boolean	This variable is of the type boolean.
OptionList	Supported/allowed values for a single choice, enumerated, text variable.
SequenceList	Supported/allowed values for an ordered sequence variable.
MemberList	Supported/allowed values for a mathematical set variable.

3.27. DataTransferStatusEnumType

Enumeration

Status in DataTransferResponse.

DataTransferStatusEnumType is used by: dataTransfer:DataTransferResponse

Value	Description
Accepted	Message has been accepted and the contained request is accepted.
Rejected	Message has been accepted but the contained request is rejected.
UnknownMessageId	Message could not be interpreted due to unknown messageId string.
UnknownVendorId	Message could not be interpreted due to unknown vendorId string.

3.28. DeleteCertificateStatusEnumType

Enumeration

DeleteCertificateStatusEnumType is used by: deleteCertificate:DeleteCertificateResponse

Value	Description
Accepted	Normal successful completion (no errors).
Failed	Processing failure.
NotFound	Requested resource not found.

3.29. DisplayMessageStatusEnumType

Enumeration

Result for a SetDisplayMessageRequest as used in a SetDisplayMessageResponse.

DisplayMessageStatusEnumType is used by: setDisplayMessage:SetDisplayMessageResponse

Value	Description
Accepted	Request to display message accepted.
NotSupportedMessageFormat	None of the formats in the given message are supported.
Rejected	Request cannot be handled.
NotSupportedPriority	The given MessagePriority not supported for displaying messages by Charging Station.
NotSupportedState	The given MessageState not supported for displaying messages by Charging Station.
UnknownTransaction	Given Transaction not known/ongoing.

3.30. EnergyTransferModeEnumType

Enumeration

Enumeration of energy transfer modes.

EnergyTransferModeEnumType is used by: Common:ChargingNeedsType

Value	Description
DC	DC charging.
AC_single_phase	AC single phase charging according to IEC 62196.
AC_two_phase	AC two phase charging according to IEC 62196.
AC_three_phase	AC three phase charging according to IEC 62196.

3.31. EventNotificationEnumType

Enumeration

Specifies the event notification type of the message.

EventNotificationEnumType is used by: notifyEvent:NotifyEventRequest.EventDataType

Value	Description
HardWiredNotification	The software implemented by the manufacturer triggered a hardwired notification.
HardWiredMonitor	Triggered by a monitor, which is hardwired by the manufacturer.
PreconfiguredMonitor	Triggered by a monitor, which is preconfigured by the manufacturer.
CustomMonitor	Triggered by a monitor, which is set with the setvariablemonitoringrequest message by the Charging Station Operator.

3.32. EventTriggerEnumType

Enumeration

EventTriggerEnumType is used by: notifyEvent:NotifyEventRequest.EventDataType

Value	Description
Alerting	Monitored variable has passed an Alert or Critical threshold
Delta	Delta Monitored Variable value has changed by more than specified amount
Periodic	Periodic Monitored Variable has been sampled for reporting at the specified interval

3.33. FirmwareStatusEnumType

Enumeration

Status of a firmware download.

A value with "Intermediate state" in the description, is an intermediate state, update process is not finished.

A value with "Failure end state" in the description, is an end state, update process has stopped, update failed.

A value with "Successful end state" in the description, is an end state, update process has stopped, update successful.

FirmwareStatusEnumType is used by: firmwareStatusNotification:FirmwareStatusNotificationRequest

Value	Description
Downloaded	Intermediate state. New firmware has been downloaded by Charging Station.
DownloadFailed	Failure end state. Charging Station failed to download firmware.
Downloading	Intermediate state. Firmware is being downloaded.
DownloadScheduled	Intermediate state. Downloading of new firmware has been scheduled.
DownloadPaused	Intermediate state. Downloading has been paused.
Idle	Charging Station is not performing firmware update related tasks. Status Idle SHALL only be used as in a FirmwareStatusNotificationRequest that was triggered by TriggerMessageRequest.
InstallationFailed	Failure end state. Installation of new firmware has failed.
Installing	Intermediate state. Firmware is being installed.
Installed	Successful end state. New firmware has successfully been installed in Charging Station.
InstallRebooting	Intermediate state. Charging Station is about to reboot to activate new firmware. This status MAY be omitted if a reboot is an integral part of the installation and cannot be reported separately.
InstallScheduled	Intermediate state. Installation of the downloaded firmware is scheduled to take place on installDateTime given in UpdateFirmware request.
InstallVerificationFailed	Failure end state. Verification of the new firmware (e.g. using a checksum or some other means) has failed and installation will not proceed. (Final failure state)
InvalidSignature	Failure end state. The firmware signature is not valid.
SignatureVerified	Intermediate state. Provide signature successfully verified.

3.34. GenericDeviceModelStatusEnumType

Enumeration

GenericDeviceModelStatusEnumType is used by: getBaseReport:GetBaseReportResponse , getMonitoringReport:GetMonitoringReportResponse , getReport:GetReportResponse , setMonitoringBase:SetMonitoringBaseResponse

Value	Description
Accepted	Request has been accepted and will be executed.
Rejected	Request has not been accepted and will not be executed.
NotSupported	The content of the request message is not supported.
EmptyResultSet	If the combination of received criteria result in an empty result set.

3.35. GenericStatusEnumType

Enumeration

Generic message response status

GenericStatusEnumType is used by: getCompositeSchedule:GetCompositeScheduleResponse , notifyEVChargingSchedule:NotifyEVChargingScheduleResponse , signCertificate:SignCertificateResponse , setMonitoringLevel:SetMonitoringLevelResponse , publishFirmware:PublishFirmwareResponse

Value	Description
Accepted	Request has been accepted and will be executed.
Rejected	Request has not been accepted and will not be executed.

3.36. GetCertificateIdUseEnumType

Enumeration

GetCertificateIdUseEnumType is used by: Common:CertificateHashDataChainType , getInstalledCertificateIds:GetInstalledCertificateIdsRequest

Value	Description
V2GRootCertificate	Use for certificate of the V2G Root.
MORootCertificate	Use for certificate from an eMobility Service provider. To support PnC charging with contracts from service providers that not derived their certificates from the V2G root.
CSMSRootCertificate	Root certificate for verification of the CSMS certificate.
V2GCertificateChain	ISO 15118 V2G certificate chain (excluding the V2GRootCertificate).
ManufacturerRootCertificate	Root certificate for verification of the Manufacturer certificate.

3.37. GetCertificateStatusEnumType

Enumeration

GetCertificateStatusEnumType is used by: getCertificateStatus:GetCertificateStatusResponse

Value	Description
Accepted	Successfully retrieved the OCSP certificate status.
Failed	Failed to retrieve the OCSP certificate status.

3.38. GetChargingProfileStatusEnumType

Enumeration

GetChargingProfileStatusEnumType is used by: getChargingProfiles:GetChargingProfilesResponse

Value	Description
Accepted	Normal successful completion (no errors).
NoProfiles	No ChargingProfiles found that match the information in the GetChargingProfilesRequest.

3.39. GetDisplayMessagesStatusEnumType

Enumeration

GetDisplayMessagesStatusEnumType is used by: getDisplayMessages:GetDisplayMessagesResponse

Value	Description
Accepted	Request accepted, there are Display Messages found that match all the requested criteria. The Charging Station will send NotifyDisplayMessagesRequest messages to report the requested Display Messages.
Unknown	No messages found that match the given criteria.

3.40. GetInstalledCertificateStatusEnumType

Enumeration

GetInstalledCertificateStatusEnumType is used by: getInstalledCertificateIds:GetInstalledCertificateIdsResponse

Value	Description
Accepted	Normal successful completion (no errors).
NotFound	Requested resource not found.

3.41. GetVariableStatusEnumType

Enumeration

GetVariableStatusEnumType is used by: getVariables:GetVariablesResponse.GetVariableResultType

Value	Description
Accepted	Variable successfully set.
Rejected	Request is rejected.
UnknownComponent	Component is not known.
UnknownVariable	Variable is not known.
NotSupportedAttributeType	The AttributeType is not supported.

3.42. HashAlgorithmEnumType

Enumeration

HashAlgorithmEnumType is used by: Common:CertificateHashDataType , Common:OCSPRequestDataType

Value	Description
SHA256	SHA-256 hash algorithm.
SHA384	SHA-384 hash algorithm.
SHA512	SHA-512 hash algorithm.

3.43. IdTokenEnumType

Enumeration

Allowable values of the **IdTokenType** field.

IdTokenEnumType is used by: Common:IdTokenType

Value	Description
Central	A centrally, in the CSMS (or other server) generated id (for example used for a remotely started transaction that is activated by SMS). No format defined, might be a UUID.
eMAID	Electro-mobility account id as defined in ISO 15118
ISO14443	ISO 14443 UID of RFID card. It is represented as an array of 4 or 7 bytes in hexadecimal representation.
ISO15693	ISO 15693 UID of RFID card. It is represented as an array of 8 bytes in hexadecimal representation.
KeyCode	User use a private key-code to authorize a charging transaction. For example: Pin-code.
Local	A locally generated id (e.g. internal id created by the Charging Station). No format defined, might be a UUID
MacAddress	
NoAuthorization	Transaction is started and no authorization possible. Charging Station only has a start button or mechanical key etc. IdToken field SHALL be left empty.

3.44. InstallCertificateStatusEnumType

Enumeration

InstallCertificateStatusEnumType is used by: installCertificate:InstallCertificateResponse

Value	Description
Accepted	The installation of the certificate succeeded.
Rejected	The certificate is invalid and/or incorrect OR the CSO tries to install more certificates than allowed.
Failed	The certificate is valid and correct, but there is another reason the installation did not succeed.

3.45. InstallCertificateUseEnumType

Enumeration

InstallCertificateUseEnumType is used by: installCertificate:InstallCertificateRequest

Value	Description
V2GRootCertificate	Use for certificate of the V2G Root, a V2G Charging Station Certificate MUST be derived from one of the installed V2GRootCertificate certificates.
MORootCertificate	Use for certificate from an eMobility Service provider. To support PnC charging with contracts from service providers that not derived their certificates from the V2G root.
CSMSRootCertificate	Root certificate, used by the CA to sign the CSMS and Charging Station certificate.
ManufacturerRootCertificate	Root certificate for verification of the Manufacturer certificate.

3.46. Iso15118EVCertificateStatusEnumType

Enumeration

Iso15118EVCertificateStatusEnumType is used by: get15118EVCertificate:Get15118EVCertificateResponse

Value	Description
Accepted	exiResponse included. This is no indication whether the update was successful, just that the message was processed properly.
Failed	Processing of the message was not successful, no exiResponse included.

3.47. LocationEnumType

Enumeration

Allowable values of the optional "location" field of a value element.

LocationEnumType is used by: Common:SampledValueType

Value	Description
Body	Measurement inside body of Charging Station (e.g. Temperature).
Cable	Measurement taken from cable between EV and Charging Station.
EV	Measurement taken by EV.
Inlet	Measurement at network ("grid") inlet connection.
Outlet	Measurement at a Connector. Default value.

3.48. LogEnumType

Enumeration

LogEnumType is used by: getLog:GetLogRequest

Value	Description
DiagnosticsLog	This contains the field definition of a diagnostics log file
SecurityLog	Sent by the CSMS to the Charging Station to request that the Charging Station uploads the security log.

3.49. LogStatusEnumType

Enumeration

Generic message response status

LogStatusEnumType is used by: getLog:GetLogResponse

Value	Description
Accepted	Accepted this log upload. This does not mean the log file is uploaded is successfully, the Charging Station will now start the log file upload.
Rejected	Log update request rejected.
AcceptedCanceled	Accepted this log upload, but in doing this has canceled an ongoing log file upload.

3.50. MeasurandEnumType

Enumeration

Allowable values of the optional "measurand" field of a Value element, as used in MeterValuesRequest and TransactionEventRequest with eventTypes *Started*, *Ended* and *Updated*. Default value of "measurand" is always "Energy.Active.Import.Register".

Note 1: Two measurands (Current.Offered and Power.Offered) are available that are strictly speaking no measured values. They indicate the maximum amount of current/power that is being offered to the EV and are intended for use in smart charging applications.

Note 2: Import is energy flow from the Grid to the Charging Station, EV or other load. Export is energy flow from the EV to the Charging Station and/or from the Charging Station to the Grid. Except in the case of a meter replacement, all "Register" values relating to a single charging transaction, or a non-transactional consumer (e.g. Charging Station internal power supply, overall supply) MUST be monotonically increasing in time.

Note 3: The actual quantity of energy corresponding to a reported ".Register" value is computed as the register value in question minus the register value recorded/reported at the start of the transaction or other relevant starting reference point in time. For improved auditability, ".Register" values SHOULD be reported exactly as they are directly read from a non-volatile register in the electrical metering hardware, and SHOULD NOT be re-based to zero at the start of transactions. This allows any "missing energy" between sequential transactions, due to hardware fault, meter replacement, mis-wiring, fraud, etc. to be identified, by allowing the CSMS to confirm that the starting register value of any transaction is identical to the finishing register value of the preceding transaction on the same connector.

MeasurandEnumType is used by: Common:SampledValueType

Value	Description
Current.Export	Instantaneous current flow from EV
Current.Import	Instantaneous current flow to EV
Current.Offered	Maximum current offered to EV
Energy.Active.Export.Register	Numerical value read from the "active electrical energy" (Wh or kWh) register of the (most authoritative) electrical meter measuring energy exported (to the grid).
Energy.Active.Import.Register	Numerical value read from the "active electrical energy" (Wh or kWh) register of the (most authoritative) electrical meter measuring energy imported (from the grid supply).
Energy.Reactive.Export.Register	Numerical value read from the "reactive electrical energy" (varh or kvarh) register of the (most authoritative) electrical meter measuring energy exported (to the grid).
Energy.Reactive.Import.Register	Numerical value read from the "reactive electrical energy" (varh or kvarh) register of the (most authoritative) electrical meter measuring energy imported (from the grid supply).
Energy.Active.Export.Interval	Absolute amount of "active electrical energy" (Wh or kWh) exported (to the grid) during an associated time "interval", specified by a Metervalues ReadingContext, and applicable interval duration configuration values (in seconds) for ClockAlignedDataInterval and TxnMeterValueSampleInterval.

Value	Description
Energy.Active.Import.Interval	Absolute amount of "active electrical energy" (Wh or kWh) imported (from the grid supply) during an associated time "interval", specified by a Metervalues ReadingContext, and applicable interval duration configuration values (in seconds) for ClockAlignedDataInterval and TxnMeterValueSampleInterval.
Energy.Active.Net	Numerical value read from the “net active electrical energy" (Wh or kWh) register.
Energy.Reactive.Export.Interval	Absolute amount of "reactive electrical energy" (varh or kvarh) exported (to the grid) during an associated time "interval", specified by a Metervalues ReadingContext, and applicable interval duration configuration values (in seconds) for ClockAlignedDataInterval and TxnMeterValueSampleInterval.
Energy.Reactive.Import.Interval	Absolute amount of "reactive electrical energy" (varh or kvarh) imported (from the grid supply) during an associated time "interval", specified by a Metervalues ReadingContext, and applicable interval duration configuration values (in seconds) for ClockAlignedDataInterval and TxnMeterValueSampleInterval.
Energy.Reactive.Net	Numerical value read from the “net reactive electrical energy" (varh or kvarh) register.
Energy.Apparent.Net	Numerical value read from the "apparent electrical energy" (VAh or kVAh) register.
Energy.Apparent.Import	Numerical value read from the "apparent electrical import energy" (VAh or kVAh) register.
Energy.Apparent.Export	Numerical value read from the "apparent electrical export energy" (VAh or kVAh) register.
Frequency	Instantaneous reading of powerline frequency
Power.Active.Export	Instantaneous active power exported by EV. (W or kW)
Power.Active.Import	Instantaneous active power imported by EV. (W or kW)
Power.Factor	Instantaneous power factor of total energy flow
Power.Offered	Maximum power offered to EV
Power.Reactive.Export	Instantaneous reactive power exported by EV. (var or kvar)
Power.Reactive.Import	Instantaneous reactive power imported by EV. (var or kvar)
SoC	State of charge of charging vehicle in percentage
Voltage	Instantaneous DC or AC RMS supply voltage

3.51. MessageFormatEnumType

Enumeration

Format of a message to be displayed on the display of the Charging Station.

MessageFormatEnumType is used by: Common:MessageContentType

Value	Description
ASCII	Message content is ASCII formatted, only printable ASCII allowed.
HTML	Message content is HTML formatted.
URI	Message content is URI that Charging Station should download and use to display. for example a HTML page to be shown in a web-browser.
UTF8	Message content is UTF-8 formatted.

3.52. MessagePriorityEnumType

Enumeration

Priority with which a message should be displayed on a Charging Station.

MessagePriorityEnumType is used by: Common:MessageInfoType , getDisplayMessages:GetDisplayMessagesRequest

Value	Description
AlwaysFront	Show this message always in front. Highest priority, don’t cycle with other messages. When a newer message with this MessagePriority is received, this message is replaced. No Charging Station own message may override this message.

Value	Description
InFront	Show this message in front of the normal cycle of messages. When more messages with this priority are to be shown, they SHALL be cycled.
NormalCycle	Show this message in the cycle of messages.

3.53. MessageStateEnumType

Enumeration

State of the Charging Station during which a message SHALL be displayed.

MessageStateEnumType is used by: Common:MessageInfoType , getDisplayMessages:GetDisplayMessagesRequest

Value	Description
Charging	Message only to be shown while the Charging Station is charging.
Faulted	Message only to be shown while the Charging Station is in faulted state.
Idle	Message only to be shown while the Charging Station is idle (not charging).
Unavailable	Message only to be shown while the Charging Station is in unavailable state.

3.54. MessageTriggerEnumType

Enumeration

Type of request to be triggered by trigger messages.

MessageTriggerEnumType is used by: triggerMessage:TriggerMessageRequest

Value	Description
BootNotification	To trigger BootNotification.
LogStatusNotification	To trigger LogStatusNotification.
FirmwareStatusNotification	To trigger FirmwareStatusNotification.
Heartbeat	To trigger Heartbeat.
MeterValues	To trigger MeterValues.
SignChargingStationCertificate	To trigger a SignCertificate with typeOfCertificate: ChargingStationCertificate.
SignV2GCertificate	To trigger a SignCertificate with typeOfCertificate: V2GCertificate
StatusNotification	To trigger StatusNotification.
TransactionEvent	To trigger TransactionEvent.
SignCombinedCertificate	To trigger a SignCertificate with typeOfCertificate: ChargingStationCertificate AND V2GCertificate
PublishFirmwareStatusNotification	To trigger PublishFirmwareStatusNotification.

3.55. MonitorEnumType

Enumeration

MonitorEnumType is used by: Common:VariableMonitoringType , setVariableMonitoring:SetVariableMonitoringRequest.SetMonitoringDataType , setVariableMonitoring:SetVariableMonitoringResponse.SetMonitoringResultType

Value	Description
UpperThreshold	Triggers an event notice when the actual value of the Variable rises above *monitorValue*
LowerThreshold	Triggers an event notice when the actual value of the Variable drops below *monitorValue*.

Value	Description
Delta	Triggers an event notice when the actual value has changed more than plus or minus *monitorValue* since the time that this monitor was set or since the last time this event notice was sent, whichever was last. For variables that are not numeric, like boolean, string or enumerations, a monitor of type Delta will trigger an event notice whenever the variable changes, regardless of the value of *monitorValue*.
Periodic	Triggers an event notice every *monitorValue* seconds interval, starting from the time that this monitor was set.
PeriodicClockAligned	Triggers an event notice every *monitorValue* seconds interval, starting from the nearest clock-aligned interval after this monitor was set. For example, a *monitorValue* of 900 will trigger event notices at 0, 15, 30 and 45 minutes after the hour, every hour.

3.56. MonitoringBaseEnumType

Enumeration

MonitoringBaseEnumType is used by: setMonitoringBase:SetMonitoringBaseRequest

Value	Description
All	Activate all pre-configured monitors.
FactoryDefault	Activate the default monitoring settings as recommended by the manufacturer. This is a subset of all pre-configured monitors.
HardWiredOnly	Clears all custom monitors and disables all pre-configured monitors.

3.57. MonitoringCriterionEnumType

Enumeration

MonitoringCriterionEnumType is used by: getMonitoringReport:GetMonitoringReportRequest

Value	Description
ThresholdMonitoring	Report variables and components with a monitor of type UpperThreshold or LowerThreshold.
DeltaMonitoring	Report variables and components with a monitor of type Delta.
PeriodicMonitoring	Report variables and components with a monitor of type Periodic or PeriodicClockAligned.

3.58. MutabilityEnumType

Enumeration

MutabilityEnumType is used by: Common:VariableAttributeType

Value	Description
ReadOnly	This variable is read-only.
WriteOnly	This variable is write-only.
ReadWrite	This variable is read-write.

3.59. NotifyEVChargingNeedsStatusEnumType

Enumeration

NotifyEVChargingNeedsStatusEnumType is used by: notifyEVChargingNeeds:NotifyEVChargingNeedsResponse

Value	Description
Accepted	A schedule will be provided momentarily.
Rejected	Service not available.
Processing	The CSMS is gathering information to provide a schedule.

3.60. OCPPInterfaceEnumType

Enumeration

Enumeration of network interfaces.

OCPPInterfaceEnumType is used by: setNetworkProfile:SetNetworkProfileRequest.NetworkConnectionProfileType

Value	Description
Wired0	Use wired connection 0
Wired1	Use wired connection 1
Wired2	Use wired connection 2
Wired3	Use wired connection 3
Wireless0	Use wireless connection 0
Wireless1	Use wireless connection 1
Wireless2	Use wireless connection 2
Wireless3	Use wireless connection 3

3.61. OCPPTransportEnumType

Enumeration

Enumeration of OCPP transport mechanisms. SOAP is currently not a valid value for OCPP 2.0.

OCPPTransportEnumType is used by: setNetworkProfile:SetNetworkProfileRequest.NetworkConnectionProfileType

Value	Description
JSON	Use JSON over WebSockets for transport of OCPP PDU's
SOAP	Use SOAP for transport of OCPP PDU's

3.62. OCPPVersionEnumType

Enumeration

Enumeration of OCPP versions.

OCPPVersionEnumType is used by: setNetworkProfile:SetNetworkProfileRequest.NetworkConnectionProfileType

Value	Description
OCPP12	OCPP version 1.2
OCPP15	OCPP version 1.5
OCPP16	OCPP version 1.6
OCPP20	OCPP version 2.0

3.63. OperationalStatusEnumType

Enumeration

Requested availability change.

OperationalStatusEnumType is used by: changeAvailability:ChangeAvailabilityRequest

Value	Description
Inoperative	Charging Station is not available for charging.
Operative	Charging Station is available for charging.

3.64. PhaseEnumType

Enumeration

Phase specifies how a measured value is to be interpreted. Please note that not all values of Phase are applicable to all Measurands.

PhaseEnumType is used by: Common:SampledValueType

Value	Description
L1	Measured on L1
L2	Measured on L2
L3	Measured on L3
N	Measured on Neutral
L1-N	Measured on L1 with respect to Neutral conductor
L2-N	Measured on L2 with respect to Neutral conductor
L3-N	Measured on L3 with respect to Neutral conductor
L1-L2	Measured between L1 and L2
L2-L3	Measured between L2 and L3
L3-L1	Measured between L3 and L1

3.65. PublishFirmwareStatusEnumType

Enumeration

Status for when publishing a Firmware.

PublishFirmwareStatusEnumType is used by: publishFirmwareStatusNotification:PublishFirmwareStatusNotificationRequest

Value	Description
Idle	
DownloadScheduled	Intermediate state. Downloading of new firmware has been scheduled.
Downloading	Intermediate state. Firmware is being downloaded.
Downloaded	Intermediate state. New firmware has been downloaded by Charging Station.
Published	The firmware has been successfully published.
DownloadFailed	Failure end state. Charging Station failed to download firmware.
DownloadPaused	Intermediate state. Downloading has been paused.
InvalidChecksum	Failure end state. The firmware checksum is not matching.
ChecksumVerified	Intermediate state. The Firmware checksum is successfully verified.
PublishFailed	Publishing the new firmware has failed.

3.66. ReadingContextEnumType

Enumeration

Values of the context field.

ReadingContextEnumType is used by: Common:SampledValueType

Value	Description
Interruption.Begin	Value taken at start of interruption.
Interruption.End	Value taken when resuming after interruption.
Other	Value for any other situations.
Sample.Clock	Value taken at clock aligned interval.
Sample.Periodic	Value taken as periodic sample relative to start time of transaction.

Value	Description
Transaction.Begin	Value taken at start of transaction.
Transaction.End	Value taken at end of transaction.
Trigger	Value taken in response to TriggerMessageRequest.

3.67. ReasonEnumType

Enumeration

Reason for stopping a transaction.

ReasonEnumType is used by: transactionEvent:TransactionEventRequest.TransactionType

Value	Description
DeAuthorized	The transaction was stopped because of the authorization status in the response to a transactionEventRequest.
EmergencyStop	Emergency stop button was used.
EnergyLimitReached	EV charging session reached a locally enforced maximum energy transfer limit
EVDisconnected	Disconnecting of cable, vehicle moved away from inductive charge unit.
GroundFault	A GroundFault has occurred
ImmediateReset	A Reset(Immediate) command was received.
Local	Stopped locally on request of the EV Driver at the Charging Station. This is a regular termination of a transaction. Examples: presenting an IdToken tag, pressing a button to stop.
LocalOutOfCredit	A local credit limit enforced through the Charging Station has been exceeded.
MasterPass	The transaction was stopped using a token with a MasterPassGroupId.
Other	Any other reason.
OvercurrentFault	A larger than intended electric current has occurred
PowerLoss	Complete loss of power.
PowerQuality	Quality of power too low, e.g. voltage too low/high, phase imbalance, etc.
Reboot	A locally initiated reset/reboot occurred. (for instance watchdog kicked in)
Remote	Stopped remotely on request of the CSMS. This is a regular termination of a transaction. Examples: termination using a smartphone app, exceeding a (non local) prepaid credit.
SOCLimitReached	Electric vehicle has reported reaching a locally enforced maximum battery State of Charge (SOC)
StoppedByEV	The transaction was stopped by the EV
TimeLimitReached	EV charging session reached a locally enforced time limit
Timeout	EV not connected within timeout

3.68. RecurrencyKindEnumType

Enumeration

RecurrencyKindEnumType is used by: Common:ChargingProfileType

Value	Description
Daily	The schedule restarts at the beginning of the next day.
Weekly	The schedule restarts at the beginning of the next week (defined as Monday morning)

3.69. RegistrationStatusEnumType

Enumeration

Result of registration in response to BootNotificationRequest.

RegistrationStatusEnumType is used by: bootNotification:BootNotificationResponse

Value	Description
Accepted	Charging Station is accepted by the CSMS.
Pending	CSMS is not yet ready to accept the Charging Station. CSMS may send messages to retrieve information or prepare the Charging Station.
Rejected	Charging Station is not accepted by CSMS. This may happen when the Charging Station id is not known by CSMS.

3.70. ReportBaseEnumType

Enumeration

ReportBaseEnumType is used by: getBaseReport:GetBaseReportRequest

Value	Description
ConfigurationInventory	Required. A (configuration) report that lists all Components/Variables that can be set by the operator.
FullInventory	Required. A (full) report that lists everything except monitoring settings.
SummaryInventory	Optional. A (summary) report that lists Components/Variables relating to the Charging Station's current charging availability, and to any existing problem conditions. For the Charging Station Component: - AvailabilityState. For each EVSE Component: - AvailabilityState. For each Connector Component: - AvailabilityState (if known and different from EVSE). For all Components in an abnormal State: - Active (Problem, Tripped, Overload, Fallback) variables. - Any other diagnostically relevant Variables of the Components. - Include TechCode and TechInfo where available. All monitored Component.Variables in Critical or Alert state shall also be included. - Charging Stations that do not have Monitoring implemented are NOT REQUIRED to include Connector Availability, monitoring alerts, and MAY limit problem reporting detail to just the active Problem boolean Variable.

3.71. RequestStartStopStatusEnumType

Enumeration

The result of a RequestStartTransactionRequest or RequestStopTransactionRequest.

RequestStartStopStatusEnumType is used by: requestStartTransaction:RequestStartTransactionResponse , requestStopTransaction:RequestStopTransactionResponse

Value	Description
Accepted	Command will be executed.
Rejected	Command will not be executed.

3.72. ReservationUpdateStatusEnumType

Enumeration

ReservationUpdateStatusEnumType is used by: reservationStatusUpdate:ReservationStatusUpdateRequest

Value	Description
Expired	The reservation is expired.
Removed	The reservation is removed.

3.73. ReserveNowStatusEnumType

Enumeration

Status in ReserveNowResponse.

ReserveNowStatusEnumType is used by: reserveNow:ReserveNowResponse

Value	Description
Accepted	Reservation has been made.
Faulted	Reservation has not been made, because evse, connectors or specified connector are in a faulted state.
Occupied	Reservation has not been made. The evse or the specified connector is occupied.
Rejected	Reservation has not been made. Charging Station is not configured to accept reservations.
Unavailable	Reservation has not been made, because evse, connectors or specified connector are in an unavailable state.

3.74. ResetEnumType

Enumeration

Type of reset requested.

ResetEnumType is used by: reset:ResetRequest

Value	Description
Immediate	Immediate reset of the Charging Station.
OnIdle	Delay reset until no more transactions are active.

3.75. ResetStatusEnumType

Enumeration

Result of ResetRequest.

ResetStatusEnumType is used by: reset:ResetResponse

Value	Description
Accepted	Command will be executed.
Rejected	Command will not be executed.
Scheduled	Reset command is scheduled, Charging Station is busy with a process that cannot be interrupted at the moment. Reset will be executed when process is finished.

3.76. SendLocalListStatusEnumType

Enumeration

Type of update for SendLocalListRequest.

SendLocalListStatusEnumType is used by: sendLocalList:SendLocalListResponse

Value	Description
Accepted	Local Authorization List successfully updated.

Value	Description
Failed	Failed to update the Local Authorization List.
VersionMismatch	Version number in the request for a differential update is less or equal then version number of current list.

3.77. SetMonitoringStatusEnumType

Enumeration

SetMonitoringStatusEnumType is used by: setVariableMonitoring:SetVariableMonitoringResponse.SetMonitoringResultType

Value	Description
Accepted	Monitor successfully set.
UnknownComponent	Component is not known.
UnknownVariable	Variable is not known.
UnsupportedMonitorType	Requested monitor type is not supported.
Rejected	Request is rejected.
Duplicate	A monitor already exists for the given type/severity combination.

3.78. SetNetworkProfileStatusEnumType

Enumeration

Possible values of SetNetworkProfileStatus as used in SetNetworkProfileResponse.

SetNetworkProfileStatusEnumType is used by: setNetworkProfile:SetNetworkProfileResponse

Value	Description
Accepted	Setting new data successful
Rejected	Setting new data rejected
Failed	Setting new data failed

3.79. SetVariableStatusEnumType

Enumeration

SetVariableStatusEnumType is used by: setVariables:SetVariablesResponse.SetVariableResultType

Value	Description
Accepted	Variable successfully set.
Rejected	Request is rejected.
UnknownComponent	Component is not known.
UnknownVariable	Variable is not known.
NotSupportedAttributeType	The AttributeType is not supported.
RebootRequired	A reboot is required.

3.80. TransactionEventEnumType

Enumeration

TransactionEventEnumType is used by: transactionEvent:TransactionEventRequest

Value	Description
Ended	Last event of a transaction
Started	First event of a transaction.
Updated	Transaction event in between 'Started' and 'Ended'.

3.81. TriggerMessageStatusEnumType

Enumeration

Status in TriggerMessageResponse.

TriggerMessageStatusEnumType is used by: triggerMessage:TriggerMessageResponse

Value	Description
Accepted	Requested message will be sent.
Rejected	Requested message will not be sent.
NotImplemented	Requested message cannot be sent because it is either not implemented or unknown.

3.82. TriggerReasonEnumType

Enumeration

Reason that triggered a transactionEventRequest.

TriggerReasonEnumType is used by: transactionEvent:TransactionEventRequest

Value	Description
Authorized	Charging is authorized, by any means. Might be an RFID, or other authorization means.
CablePluggedIn	Cable is plugged in and EVDetected.
ChargingRateChanged	Rate of charging changed by more than *LimitChangeSignificance*.
ChargingStateChanged	Charging State changed.
Deauthorized	The transaction was stopped because of the authorization status in the response to a transactionEventRequest.
EnergyLimitReached	Maximum energy of charging reached. For example: in a pre-paid charging solution
EVCommunicationLost	Communication with EV lost, for example: cable disconnected.
EVConnectTimeout	EV not connected before the connection is timed out.
MeterValueClock	Needed to send a clock aligned meter value
MeterValuePeriodic	Needed to send a periodic meter value
TimeLimitReached	Maximum time of charging reached. For example: in a pre-paid charging solution
Trigger	Requested by the CSMS via a TriggerMessageRequest.
UnlockCommand	CSMS sent an Unlock Connector command.
StopAuthorized	An EV Driver has been authorized to stop charging. For example: By swiping an RFID card.
EVDeparted	EV departed. For example: When a departing EV triggers a parking bay detector.
EVDetected	EV detected. For example: When an arriving EV triggers a parking bay detector.
RemoteStop	A RequestStopTransactionRequest has been sent.
RemoteStart	A RequestStartTransactionRequest has been sent.
AbnormalCondition	An Abnormal Error or Fault Condition has occurred.
SignedDataReceived	Signed data is received from the energy meter.
ResetCommand	CSMS sent a Reset Charging Station command.

3.83. UnlockStatusEnumType

Enumeration

Status in response to UnlockConnectorRequest.

UnlockStatusEnumType is used by: unlockConnector:UnlockConnectorResponse

Value	Description
Unlocked	Connector has successfully been unlocked.
UnlockFailed	Failed to unlock the connector.
OngoingAuthorizedTransaction	The connector is not unlocked, because there is still an authorized transaction ongoing.
UnknownConnector	The specified connector is not known by the Charging Station.

3.84. UnpublishFirmwareStatusEnumType

Enumeration

Status for when publishing a Firmware.

UnpublishFirmwareStatusEnumType is used by: unpublishFirmware:UnpublishFirmwareResponse

Value	Description
DownloadOngoing	Intermediate state. Firmware is being downloaded.
NoFirmware	There is no published file.
Unpublished	Successful end state. Firmware file no longer being published.

3.85. UpdateEnumType

Enumeration

UpdateEnumType is used by: sendLocalList:SendLocalListRequest

Value	Description
Differential	Indicates that the current Local Authorization List must be updated with the values in this message.
Full	Indicates that the current Local Authorization List must be replaced by the values in this message.

3.86. UpdateFirmwareStatusEnumType

Enumeration

Generic message response status

UpdateFirmwareStatusEnumType is used by: updateFirmware:UpdateFirmwareResponse

Value	Description
Accepted	Accepted this firmware update request. This does not mean the firmware update is successful, the Charging Station will now start the firmware update process.
Rejected	Firmware update request rejected.
AcceptedCanceled	Accepted this firmware update request, but in doing this has canceled an ongoing firmware update.
InvalidCertificate	The certificate is invalid.
RevokedCertificate	Failure end state. The Firmware Signing certificate has been revoked.

3.87. UploadLogStatusEnumType

Enumeration

UploadLogStatusEnumType is used by: logStatusNotification:LogStatusNotificationRequest

Value	Description
BadMessage	A badly formatted packet or other protocol incompatibility was detected.
Idle	The Charging Station is not uploading a log file. Idle SHALL only be used when the message was triggered by a TriggerMessageRequest.
NotSupportedOperation	The server does not support the operation
PermissionDenied	Insufficient permissions to perform the operation.
Uploaded	File has been uploaded successfully.
UploadFailure	Failed to upload the requested file.
Uploading	File is being uploaded.
AcceptedCanceled	On-going log upload is canceled and new request to upload log has been accepted.

3.88. VPNEnumType

Enumeration

Enumeration of VPN Types.

VPNEnumType is used by: setNetworkProfile:SetNetworkProfileRequest.VPNType

Value	Description
IKEv2	IKEv2 VPN
IPSec	IPSec VPN
L2TP	L2TP VPN
PPTP	PPTP VPN