Point-initiated messages. In the request the Central System indicates which message it wishes to receive. For every such requested message the Central System MAY optionally indicate to which connector this request applies. The requested message is leading: if the specified connectorId is not relevant to the message, it should be ignored. In such cases the requested message should still be sent.

Inversely, if the connectorId is relevant but absent, this should be interpreted as "for all allowed connectorId values". For example, a request for a statusNotification for connectorId 0 is a request for the status of the Charge Point. A request for a statusNotification without connectorId is a request for multiple statusNotifications: the notification for the Charge Point itself and a notification for each of its connectors.

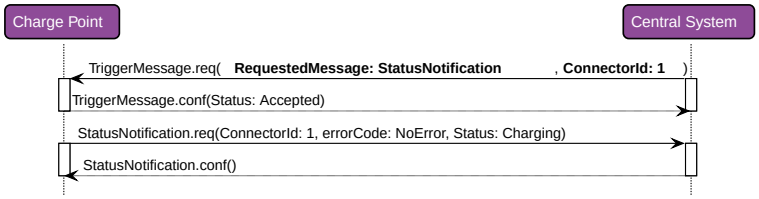

Figure 39. Sequence Diagram: Trigger Message StatusNotification Example

The Charge Point SHALL first send the TriggerMessage response, before sending the requested message. In the TriggerMessage.conf the Charge Point SHALL indicate whether it will send it or not, by returning ACCEPTED or REJECTED. It is up to the Charge Point if it accepts or rejects the request to send. If the requested message is unknown or not implemented the Charge Point SHALL return NOT_IMPLEMENTED.

Messages that the Charge Point marks as accepted SHOULD be sent. The situation could occur that, between accepting the request and actually sending the requested message, that same message gets sent because of normal operations. In such cases the message just sent MAY be considered as complying with the request.

The TriggerMessage mechanism is not intended to retrieve historic data. The messages it triggers should only give current information. A MeterValues.req message triggered in this way for instance SHALL return the most recent measurements for all measurands configured in configuration key `MeterValuesSampledData`. StartTransaction and StopTransaction have been left out of this mechanism because they are not state related, but by their nature describe a transition.

5.18. Unlock Connector

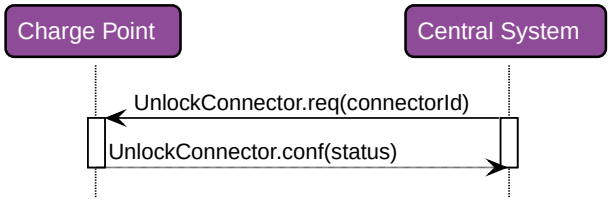

Figure 40. Sequence Diagram: Unlock Connector

Central System can request a Charge Point to unlock a connector. To do so, the Central System SHALL send an UnlockConnector.req PDU.

The purpose of this message: Help EV drivers that have problems unplugging their cable from the Charge Point in case of malfunction of the Connector cable retention. When a EV driver calls the CPO help-desk, an operator could manually trigger the sending of an UnlockConnector.req to the Charge Point, forcing a new attempt to unlock the connector. Hopefully this time the connector unlocks and the EV driver can unplug the cable and drive away.

The UnlockConnector.req SHOULD NOT be used to remotely stop a running transaction, use the Remote Stop Transaction instead.

Upon receipt of an UnlockConnector.req PDU, the Charge Point SHALL respond with a UnlockConnector.conf PDU. The response PDU SHALL indicate whether the Charge Point was able to unlock its connector.

If there was a transaction in progress on the specific connector, then Charge Point SHALL finish the transaction first as described in Stop Transaction.

UnlockConnector.req is intented only for unlocking the cable retention lock on the Connector, not for unlocking a connector access door.

5.19. Update Firmware

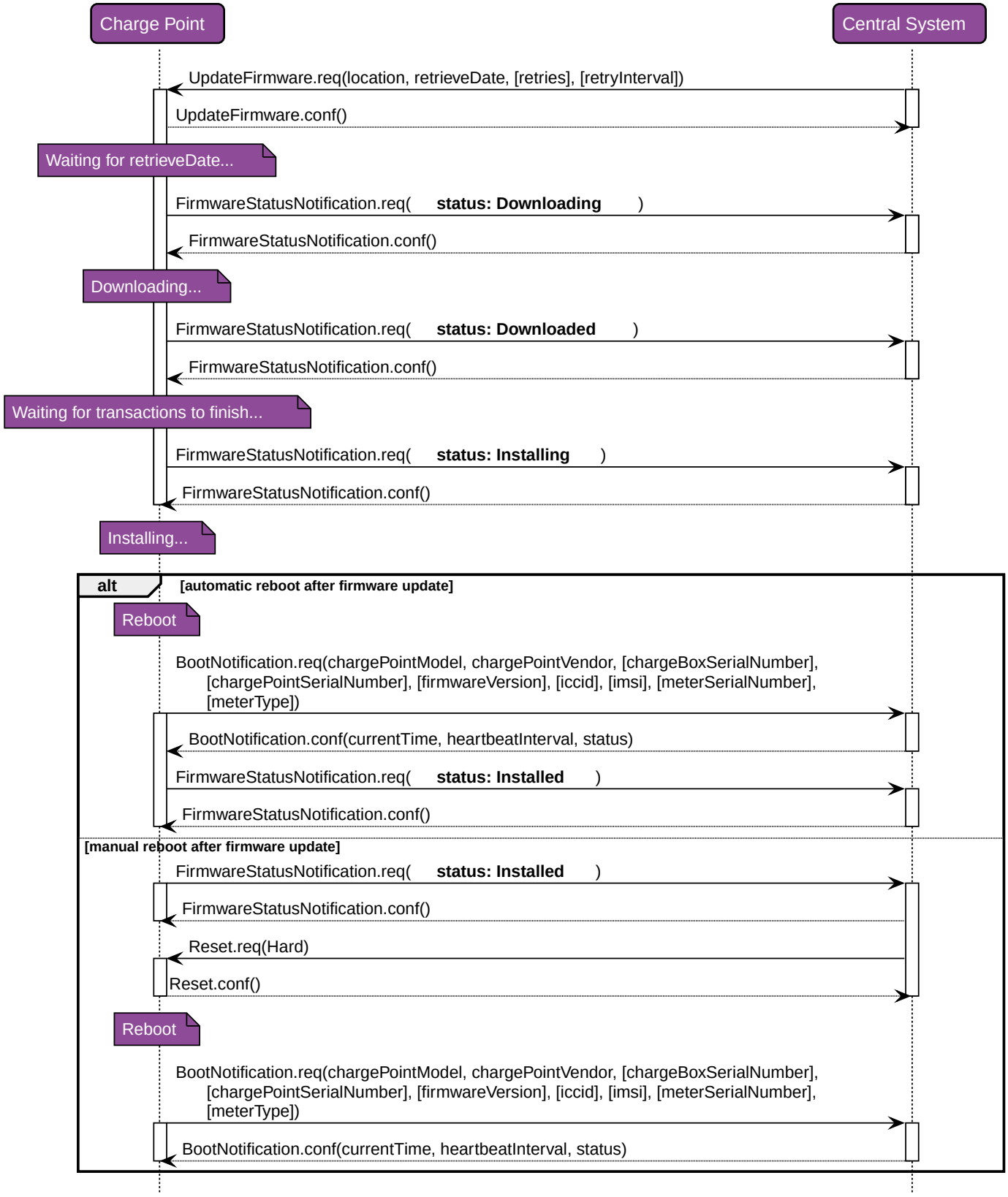

Figure 41. Sequence Diagram: Update Firmware

Central System can notify a Charge Point that it needs to update its firmware. The Central System SHALL send an UpdateFirmware.req PDU to instruct the Charge Point to install new firmware. The PDU SHALL contain a date and time after which the Charge Point is allowed to retrieve the new firmware and the location from which the firmware can be downloaded.

Upon receipt of an UpdateFirmware.req PDU, the Charge Point SHALL respond with a UpdateFirmware.conf PDU. The Charge Point SHOULD start retrieving the firmware as soon as possible after retrieve-date.

During downloading and installation of the firmware, the Charge Point MUST send FirmwareStatusNotification.req PDUs to keep the Central System updated with the status of the update process.

The Charge Point SHALL, if the new firmware image is "valid", install the new firmware as soon as it is able to.

If it is not possible to continue charging during installation of firmware, it is RECOMMENDED to wait until Charging Session has ended (Charge Point idle) before commencing installation. It is RECOMMENDED to set connectors that are not in use to UNAVAILABLE while the Charge Point waits for the Session to end.

The sequence diagram above is an example. It is good practice to first reboot the Charge Point to check the new firmware is booting and able to connect to the Central System, before sending the status: *Installed*. This is not a requirement.

6. Messages

6.1. Authorize.req

This contains the field definition of the Authorize.req PDU sent by the Charge Point to the Central System. See also Authorize

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
idTag	IdToken	1..1	Required. This contains the identifier that needs to be authorized.

6.2. Authorize.conf

This contains the field definition of the Authorize.conf PDU sent by the Central System to the Charge Point in response to a Authorize.req PDU. See also Authorize

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
idTagInfo	IdTagInfo	1..1	Required. This contains information about authorization status, expiry and parent id.

6.3. BootNotification.req

This contains the field definition of the BootNotification.req PDU sent by the Charge Point to the Central System. See also Boot Notification

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
chargeBoxSerialNumber	CiString25Type	0..1	Optional. This contains a value that identifies the serial number of the Charge Box inside the Charge Point. Deprecated, will be removed in future version
chargePointModel	CiString20Type	1..1	Required. This contains a value that identifies the model of the ChargePoint.
chargePointSerialNumber	CiString25Type	0..1	Optional. This contains a value that identifies the serial number of the Charge Point.
chargePointVendor	CiString20Type	1..1	Required. This contains a value that identifies the vendor of the ChargePoint.
firmwareVersion	CiString50Type	0..1	Optional. This contains the firmware version of the Charge Point.
iccid	CiString20Type	0..1	Optional. This contains the ICCID of the modem's SIM card.
imsi	CiString20Type	0..1	Optional. This contains the IMSI of the modem's SIM card.
meterSerialNumber	CiString25Type	0..1	Optional. This contains the serial number of the main electrical meter of the Charge Point.

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
meterType	CiString25Type	0..1	Optional. This contains the type of the main electrical meter of the Charge Point.

6.4. BootNotification.conf

This contains the field definition of the BootNotification.conf PDU sent by the Central System to the Charge Point in response to a BootNotification.req PDU. See also Boot Notification

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
currentTime	dateTime	1..1	Required. This contains the Central System's current time.
interval	integer	1..1	Required. When RegistrationStatus is *Accepted*, this contains the heartbeat interval in seconds. If the Central System returns something other than Accepted, the value of the interval field indicates the minimum wait time before sending a next BootNotification request.
status	RegistrationStatus	1..1	Required. This contains whether the Charge Point has been registered within the System Central.

6.5. CancelReservation.req

This contains the field definition of the CancelReservation.req PDU sent by the Central System to the Charge Point. See also Cancel Reservation

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
reservationId	integer	1..1	Required. Id of the reservation to cancel.

6.6. CancelReservation.conf

This contains the field definition of the CancelReservation.conf PDU sent by the Charge Point to the Central System in response to a CancelReservation.req PDU. See also Cancel Reservation

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	CancelReservationStatus	1..1	Required. This indicates the success or failure of the cancelling of a reservation by Central System.

6.7. ChangeAvailability.req

This contains the field definition of the ChangeAvailability.req PDU sent by the Central System to the Charge Point. See also Change Availability

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
connectorId	integer connectorId >= 0	1..1	Required. The id of the connector for which availability needs to change. Id '0' (zero) is used if the availability of the Charge Point and all its connectors needs to change.
type	AvailabilityType	1..1	Required. This contains the type of availability change that the Charge Point should perform.

6.8. ChangeAvailability.conf

This contains the field definition of the ChangeAvailability.conf PDU return by Charge Point to Central System. See also Change Availability

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	AvailabilityStatus	1..1	Required. This indicates whether the Charge Point is able to perform the availability change.

6.9. ChangeConfiguration.req

This contains the field definition of the ChangeConfiguration.req PDU sent by Central System to Charge Point. It is RECOMMENDED that the content and meaning of the 'key' and 'value' fields is agreed upon between Charge Point and Central System. See also Change Configuration

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
key	CiString50Type	1..1	Required. The name of the configuration setting to change. See for standard configuration key names and associated values
value	CiString500Type	1..1	Required. The new value as string for the setting. See for standard configuration key names and associated values

6.10. ChangeConfiguration.conf

This contains the field definition of the ChangeConfiguration.conf PDU returned from Charge Point to Central System. See also Change Configuration

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	ConfigurationStatus	1..1	Required. Returns whether configuration change has been accepted.

6.11. ClearCache.req

This contains the field definition of the ClearCache.req PDU sent by the Central System to the Charge Point. See also Clear Cache

No fields are defined.

6.12. ClearCache.conf

This contains the field definition of the ClearCache.conf PDU sent by the Charge Point to the Central System in response to a ClearCache.req PDU. See also Clear Cache

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	ClearCacheStatus	1..1	Required. Accepted if the Charge Point has executed the request, otherwise rejected.

6.13. ClearChargingProfile.req

This contains the field definition of the ClearChargingProfile.req PDU sent by the Central System to the Charge Point.

The Central System 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 connectorId, stackLevel and chargingProfilePurpose fields. See also Clear Charging Profile

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
id	integer	0..1	Optional. The ID of the charging profile to clear.
connectorId	integer	0..1	Optional. Specifies the ID of the connector for which to clear charging profiles. A connectorId of zero (0) specifies the charging profile for the overall Charge Point. Absence of this parameter means the clearing applies to all charging profiles that match the other criteria in the request.
chargingProfilePurpose	ChargingProfilePurposeType	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

6.14. ClearChargingProfile.conf

This contains the field definition of the ClearChargingProfile.conf PDU sent by the Charge Point to the Central System in response to a ClearChargingProfile.req PDU. See also Clear Charging Profile

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	ClearChargingProfileStatus	1..1	Required. Indicates if the Charge Point was able to execute the request.

6.15. DataTransfer.req

This contains the field definition of the DataTransfer.req PDU sent either by the Central System to the Charge Point or vice versa. See also Data Transfer

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
vendorId	CiString255Type	1..1	Required. This identifies the Vendor specific implementation
messageId	CiString50Type	0..1	Optional. Additional identification field
data	Text Length undefined	0..1	Optional. Data without specified length or format.

6.16. DataTransfer.conf

This contains the field definition of the DataTransfer.conf PDU sent by the Charge Point to the Central System or vice versa in response to a DataTransfer.req PDU. See also Data Transfer

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	DataTransferStatus	1..1	Required. This indicates the success or failure of the data transfer.
data	Text Length undefined	0..1	Optional. Data in response to request.

6.17. DiagnosticsStatusNotification.req

This contains the field definition of the DiagnosticsStatusNotification.req PDU sent by the Charge Point to the Central System. See also Diagnostics Status Notification

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	DiagnosticsStatus	1..1	Required. This contains the status of the diagnostics upload.

6.18. DiagnosticsStatusNotification.conf

This contains the field definition of the DiagnosticsStatusNotification.conf PDU sent by the Central System to the Charge Point in response to a DiagnosticsStatusNotification.req PDU. See also Diagnostics Status Notification

No fields are defined.

6.19. FirmwareStatusNotification.req

This contains the field definition of the FirmwareStatusNotifitacion.req PDU sent by the Charge Point to the Central System. See also Firmware Status Notification

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	FirmwareStatus	1..1	Required. This contains the progress status of the firmware installation.

6.20. FirmwareStatusNotification.conf

This contains the field definition of the FirmwareStatusNotification.conf PDU sent by the Central System to the Charge Point in response to a FirmwareStatusNotification.req PDU. See also Firmware Status Notification

No fields are defined.

6.21. GetCompositeSchedule.req

This contains the field definition of the GetCompositeSchedule.req PDU sent by the Central System to the Charge Point. See also Get Composite Schedule

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
connectorId	integer	1..1	Required. The ID of the Connector for which the schedule is requested. When ConnectorId=0, the Charge Point will calculate the expected consumption for the grid connection.
duration	integer	1..1	Required. Time in seconds. length of requested schedule
chargingRateUnit	ChargingRateUnitType	0..1	Optional. Can be used to force a power or current profile

6.22. GetCompositeSchedule.conf

This contains the field definition of the GetCompositeSchedule.conf PDU sent by the Charge Point to the Central System in response to a GetCompositeSchedule.req PDU. See also Get Composite Schedule

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	GetCompositeScheduleStatus	1..1	Required. Status of the request. The Charge Point will indicate if it was able to process the request
connectorId	integer	0..1	Optional. The charging schedule contained in this notification applies to a Connector.
scheduleStart	dateTime	0..1	Optional. Time. Periods contained in the charging profile are relative to this point in time. If status is "Rejected", this field may be absent.
chargingSchedule	ChargingSchedule	0..1	Optional. Planned Composite Charging Schedule, the energy consumption over time. Always relative to ScheduleStart. If status is "Rejected", this field may be absent.

6.23. GetConfiguration.req

This contains the field definition of the GetConfiguration.req PDU sent by the Central System to the Charge Point. See also Get Configuration

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
key	CiString50Type	0..*	Optional. List of keys for which the configuration value is requested.

6.24. GetConfiguration.conf

This contains the field definition of the GetConfiguration.conf PDU sent by Charge Point the to the Central System in response to a GetConfiguration.req. See also Get Configuration

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
configurationKey	KeyValue	0..*	Optional. List of requested or known keys
unknownKey	CiString50Type	0..*	Optional. Requested keys that are unknown

6.25. GetDiagnostics.req

This contains the field definition of the GetDiagnostics.req PDU sent by the Central System to the Charge Point. See also Get Diagnostics

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
location	anyURI	1..1	Required. This contains the location (directory) where the diagnostics file shall be uploaded to.
retries	integer	0..1	Optional. This specifies how many times Charge Point must try to upload the diagnostics before giving up. If this field is not present, it is left to Charge Point 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 Charge Point to decide how long to wait between attempts.
startTime	dateTime	0..1	Optional. This contains the date and time of the oldest logging information to include in the diagnostics.
stopTime	dateTime	0..1	Optional. This contains the date and time of the latest logging information to include in the diagnostics.

6.26. GetDiagnostics.conf

This contains the field definition of the GetDiagnostics.conf PDU sent by the Charge Point to the Central System in response to a GetDiagnostics.req PDU. See also Get Diagnostics

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
fileName	CiString255Type	0..1	Optional. This contains the name of the file with diagnostic information that will be uploaded. This field is not present when no diagnostic information is available.

6.27. GetLocalListVersion.req

This contains the field definition of the GetLocalListVersion.req PDU sent by the Central System to the Charge Point. See also Get Local List Version

No fields are defined.

6.28. GetLocalListVersion.conf

This contains the field definition of the GetLocalListVersion.conf PDU sent by the Charge Point to Central System in response to a GetLocalListVersion.req PDU. See also Get Local List Version

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
listVersion	integer	1..1	Required. This contains the current version number of the local authorization list in the Charge Point.

6.29. Heartbeat.req

This contains the field definition of the Heartbeat.req PDU sent by the Charge Point to the Central System. See also Heartbeat

No fields are defined.

6.30. Heartbeat.conf

This contains the field definition of the Heartbeat.conf PDU sent by the Central System to the Charge Point in response to a Heartbeat.req PDU. See also Heartbeat

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
currentTime	dateTime	1..1	Required. This contains the current time of the Central System.

6.31. MeterValues.req

This contains the field definition of the MeterValues.req PDU sent by the Charge Point to the Central System. See also Meter Values

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
connectorId	integer connectorId >= 0	1..1	Required. This contains a number (>0) designating a connector of the Charge Point.'0' (zero) is used to designate the main powermeter.
transactionId	integer	0..1	Optional. The transaction to which these meter samples are related.
meterValue	MeterValue	1..*	Required. The sampled meter values with timestamps.

6.32. MeterValues.conf

This contains the field definition of the MeterValues.conf PDU sent by the Central System to the Charge Point in response to a MeterValues.req PDU. See also Meter Values

No fields are defined.

6.33. RemoteStartTransaction.req

This contains the field definitions of the RemoteStartTransaction.req PDU sent to Charge Point by Central System. See also Remote Start Transaction

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
connectorId	integer	0..1	Optional. Number of the connector on which to start the transaction. connectorId SHALL be > 0
idTag	IdToken	1..1	Required. The identifier that Charge Point must use to start a transaction.
chargingProfile	ChargingProfile	0..1	Optional. Charging Profile to be used by the Charge Point for the requested transaction. ChargingProfilePurpose MUST be set to TxProfile

6.34. RemoteStartTransaction.conf

This contains the field definitions of the RemoteStartTransaction.conf PDU sent from Charge Point to Central System. See also Remote Start Transaction

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	RemoteStartStopStatus	1..1	Required. Status indicating whether Charge Point accepts the request to start a transaction.

6.35. RemoteStopTransaction.req

This contains the field definitions of the RemoteStopTransaction.req PDU sent to Charge Point by Central System. See also Remote Stop Transaction

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
transactionId	integer	1..1	Required. The identifier of the transaction which Charge Point is requested to stop.

6.36. RemoteStopTransaction.conf

This contains the field definitions of the RemoteStopTransaction.conf PDU sent from Charge Point to Central System. See also Remote Stop Transaction

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	RemoteStartStopStatus	1..1	Required. Status indicating whether Charge Point accepts the request to stop a transaction.

6.37. ReserveNow.req

This contains the field definition of the ReserveNow.req PDU sent by the Central System to the Charge Point. See also Reserve Now

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
connectorId	integer connectorId >= 0	1..1	Required. This contains the id of the connector to be reserved. A value of 0 means that the reservation is not for a specific connector.
expiryDate	dateTime	1..1	Required. This contains the date and time when the reservation ends.
idTag	IdToken	1..1	Required. The identifier for which the Charge Point has to reserve a connector.
parentIdTag	IdToken	0..1	Optional. The parent idTag.
reservationId	integer	1..1	Required. Unique id for this reservation.

6.38. ReserveNow.conf

This contains the field definition of the ReserveNow.conf PDU sent by the Charge Point to the Central System in response to a ReserveNow.req PDU. See also Reserve Now

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	ReservationStatus	1..1	Required. This indicates the success or failure of the reservation.

6.39. Reset.req

This contains the field definition of the Reset.req PDU sent by the Central System to the Charge Point. See also Reset

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
type	ResetType	1..1	Required. This contains the type of reset that the Charge Point should perform.

6.40. Reset.conf

This contains the field definition of the Reset.conf PDU sent by the Charge Point to the Central System in response to a Reset.req PDU. See also Reset

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	ResetStatus	1..1	Required. This indicates whether the Charge Point is able to perform the reset.

6.41. SendLocalList.req

This contains the field definition of the SendLocalList.req PDU sent by the Central System to the Charge Point.

If no (empty) localAuthorizationList is given and the updateType is Full, all identifications are removed from the list. Requesting a Differential update without (empty) localAuthorizationList will have no effect on the list. All idTags in the localAuthorizationList MUST be unique, no duplicate values are allowed. See also Send Local List

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
listVersion	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.
localAuthorizationList	AuthorizationData	0..*	Optional. In case of a full update this contains the list of values that form the new local authorization list. In case of a differential update it contains the changes to be applied to the local authorization list in the Charge Point. Maximum number of AuthorizationData elements is available in the configuration key: `SendLocalListMaxLength`
updateType	UpdateType	1..1	Required. This contains the type of update (full or differential) of this request.

6.42. SendLocalList.conf

This contains the field definition of the SendLocalList.conf PDU sent by the Charge Point to the Central System in response to a SendLocalList.req PDU. See also Send Local List

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	UpdateStatus	1..1	Required. This indicates whether the Charge Point has successfully received and applied the update of the local authorization list.

6.43. SetChargingProfile.req

This contains the field definition of the SetChargingProfile.req PDU sent by the Central System to the Charge Point.

The Central System uses this message to send charging profiles to a Charge Point. See also Set Charging Profile

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
connectorId	integer	1..1	Required. The connector to which the charging profile applies. If connectorId = 0, the message contains an overall limit for the Charge Point.
csChargingProfiles	ChargingProfile	1..1	Required. The charging profile to be set at the Charge Point.

6.44. SetChargingProfile.conf

This contains the field definition of the SetChargingProfile.conf PDU sent by the Charge Point to the Central System in response to a SetChargingProfile.req PDU. See also Set Charging Profile

FIELD NAME	FIELD TYPE	CARD.	DESCRIPTION
status	ChargingProfileStatus	1..1	Required. Returns whether the Charge Point 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 Charge Point may need to take into account.