Technical Journal

TITLE:
PS OTA - FAQ for technicians

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Rows beginning with * are modified
Note! If using a printed copy of this Technical Journal, first check for the latest online version.

DESCRIPTION:
*Changed information in FAQ section.

This journal only applies to a vehicle with an Android based Infotainment system (iCup).

FAQ related OTA.

Purpose

This Technical Journal should aid National Sales Companies, Retailer Staff, Technicians, Care Agents and partners, to answer questions that may arise relating to OTA.
We need to manage customer interaction, questions, and any other issues arising in the correct manner.

It is important to have an overarching communication policy to give well founded answers to customers that may have a different set of expectations of what functionality is expected with OTA. This document should be used as a guideline for the above purpose and should never be given away to customers, it is a living document in which the content may change quickly.

Effective Date

The information in this FAQ is valid from the period from 2021 week 8 until further notice.

OTA = Over The Air software update
FAQ = Frequently Asked Questions
SW = Software
QB = Quality Bulletin
ECU = Electronic Control Unit

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NSC = National Sales Company
BEV = Battery Electric Vehicle
RSA = Roadside Assistance

CSC Customer Symptom Codes

Code	Description
1Z	Service/repair/Software update failed
52	Remote update/Does not work
3L	Technician information/Repair information/Not for warranty use
2V	Technician information/Software/Vehicle communication/Not for warranty use

DTC Diagnostic Trouble Codes

Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
534							2021-9999		0000001-0999999	202007-999952

SERVICE:
GENERAL FAQ

Q - Who pays for the data traffic related to OTA and for how long?
A - Polestar central organization pays for all data traffic and it is included as long as the hardware supports it.

Q - Why does Polestar use OTA SW instead of doing it at the workshop?
A - Polestar uses both VIDA and OTA, it's the next step to compete with our competitors within the automotive industry.

Q - How often will we conduct OTA SW updates?
A - Several times per year.

Q - Which cars can update SW through OTA?
A - All cars with the Google Android infotainment system have the OTA functionality.

Q - How long does it take to do an OTA SW installation?
A - Approximately 1.5 hours. In some cases, it might be faster or slower.

Q - Will the customer be informed of which updates and new functionality have been made after OTA?
A - Prior the update - when prompted with a request for installation, check under the (i) prompt on the top right corner of the screen, then press "Read More" before initiating SW installation.
After the update – the customer can find information about latest SW on the support pages for certain markets.

Q - Can we offer OTA to fix QB?
A - Yes, if the QB fix relates to SW.

Q - Can the customer view the Customer Letter (i.e. for a QB) in the car?
A - Yes, the same way as all other release notes - please press the “i” prompt in the center-display and on the following screen, press “read more”, then the customer will be redirected to content of the Customer Letter.

Q - Can the customer schedule the installation from the mobile phone e.g. using the Polestar app?
A - No.

Q - How can the customer know if the update contains a QB?
A - The customer will be notified in two ways:
1. Via email/mail.
2. Via message on the center display in the car.
Please note that the QB always has a unique ID-number e.g. QB-R/-S/-X followed by a 5-digit number 12345.

Q - What SW will be sent via OTA SW update?
A - General SW updates and QB updates, if the QB does not contain any other action requiring a visit to a workshop.
OTA will NOT handle Pre-Delivery Service SW installations, SW installations when replacing ECU or SW for accessories (at least not for the time being).

Q - Will the OTA SW updates be downloaded to the car via the WiFi of the customers phone, or will the car have a unique car SIM installed?
A - All cars with Google Automotive Services can be supported by OTA. They have an internal SIM-card supporting global roaming installed.

Q - Is the customer clearly informed about the disablement process during OTA installation?
And are they fully aware that the car will not be able to be driven during the installation period?
A - Disablement is part of initiating the OTA installation during the update of the car ECU’s.
Once an installation procedure has been initiated, the SW is being over-written, and the car will be not be accessible for approximately 1.5 hours.
The customer is informed via an in-car message that the car needs to be locked and alarmed in order to install.
Unlocking and entering the car will interrupt the installation.
The customer is made aware of this and approves this when choosing the install option on the center display in the car.
So, it is essential that the customer and/or user carefully plan when they would like the installation to commence, during a time the car can remain undisturbed, such as during the night.

Q - Am I allowed or able to open the car during installation to retrieve something I urgently need from the car?
A - It is NOT advisable.
By using your mechanical key, it is possible to unlock the car.

NOTE! The remote key fob is disarmed as part of the OTA process.
If a customer absolutely feels the need to access the car, they can do so using the mechanical key, as the remote key fob is disabled.
NOTE! There is a risk that accessing the car may interrupt the SW installation and, in the worst case scenario, may risk that the car cannot be used.

Q - Outside of warranty cases, is this SW free via OTA but charged for at the workshop?
A - This is valid at the moment of writing but may vary depending on market.

Q - What is the escalation process in the event of OTA SW update failure and the car cannot be used?
A - Depending on market setup, assistance will be provided to the customer by either Call Center and/or RSA.
The Call Center agent will be informed immediately via system integration of car and back-end systems if any car is reporting a failed OTA SW update.
This may vary depending on market.

Q - Since all retailers have Workshop WiFi, how does OTA relates to Workshop WiFi?
A - All SW installations performed in the workshop today, will not be removed / overwritten due to OTA.
The OTA will only handle general SW updates and QB.
Furthermore, OTA will NOT handle Pre-Delivery Service SW installations, SW installations when replacing ECU or SW accessories.

Q - Customer haven ´t received any new SW to the car but their neighbor's cars have - what's the reason?
A - Each car has a unique configuration.
Not all cars are updated at the same time with the same SW packages.
You will only receive an OTA SW update if it is applicable to your car.

Q - Is there information cascaded in conjunction with upcoming/pending OTA-release?
A - Currently, the Polestar central quality organization will inform the NSC when an OTA SW update is about to be released in their market.

Q - How does the customer receive information about an upcoming / pending OTA SW download?
A - If the customer has automatic download turned on in the settings menu, the download will take place seamless in the background.
If the customer has automatic download turned off, a prompt will occur every time the customer enters the car, asking if SW can be downloaded to the car.
Once the installation prompt appears, the SW is then available for installation in the car.
Download = SW downloaded from cloud to car.
Installation = SW installed in the car.

Q - Can the customer schedule the OTA installation?
A - They can choose between 2 options: "now" or "later".
If the customer chooses "later", they will continue to be prompted to install the SW until they choose "now".
"Now" means that the car will start to install the SW when the prerequisites are met, i.e. car is locked and both 12V and high voltage battery SOC are OK.

Q - Can the SW be installed without internet connection, e.g. in an underground garage of a hotel or home parking?
A - In-car internet connection is only required to transfer the data-package to the car.
The installation procedure does not require internet connection.
NOTE! Without internet connection, the customer will not receive a notification message in their Polestar app that installation has finished.
Also, the car cannot automatically report back if a failure has occurred.

In the back-end system it will most likely report a timeout, triggering a case for a Care Center agent to act upon.
Once the car re-establishes an internet connection, it will begin sending the information.
Technically, the car needs connection once it's "woken up", sending a signal to the cloud saying the new installation was successful.

Q - Where can the technician find information about how OTA updates work?
A - Using VIDA: Design and Function documents.
Information is also available in TRIP.

Q - How do I know if there is a problem with the external MNO (Mobile Network Operator) connection of the car?
A - If MNO has a problem, - "No internet Connection" - all the other connected services will not work, usually visible on the upper corner of the screen, as in an Android telephone.

Q - Can the customer install an own SIM card in the car for data-traffic?
A - No, it's only possible to utilize Polestar's built-in SIM card

Q - What happens to the OTA SW package if the workshop installs the SW using VIDA?
A - The current OTA SW will be removed, and VIDA will show status "Cancelled".
The customer will no longer be prompted with the installation question in the car display.
*NOTE! If SW is installed using VIDA, the OTA-update will automatically be removed. The OTA update will also be removed and not be redeployed if a new VIDA readout is performed.

Q - Can the workshop technician know if the customer car has an ongoing OTA SW package downloaded but not yet installed?
A - By doing a VIN-search using VIDA; the technician can find this information.
Using VIDA: Tab "Software History" - "Order History", Order Reference: OTA and Order Status: Delivered.
NOTE! The customers car needs to have connectivity with the cloud.

Q - What should technicians use as a claim-code when fixing a car with related OTA-problems?
A - Normal warranty policy and procedures apply.

Q - If a customer calls with an issue, where do I as a technician find the information about the OTA SW package?
A - Using VIDA: Tab "Software History" - "Order History", Order Reference: OTA and Order Status: Failed or Cancelled.
NOTE! Status Failed in VIDA could mean one of two things - "Critical Failure" or "Failure".
"Critical Failure" = Message in the car "The update could not complete – please pay extra/careful attention to error messages".
Car must be taken to a workshop to be repaired.

Q - How can the technician take care of a car with an OTA "Critical Failure"?
A - Follow the normal fault tracing for interrupted SW download and if support is needed, please contact your local helpdesk through your normal escalation process.

Q - Can the customer connect the car to local WiFi to handle the SW download?
A - No, the car does not have this functionality.

The transfer of data is performed over the car's internal SIM card and is carried out when the car is in "Active mode" i.e. during driving.

Q - Are there any battery minimum State Of Charge (SOC) conditions required prior to SW installation?
A - Yes, the car will automatically check the SOC in the 12V battery immediately before an attempt to install the SW.
The car will also check so SOC-level in the propulsion High Voltage battery is above 40% or higher before an attempt to install the SW.

Q - Will there be any kind of disclaimer in the event that a SW download could overwrite some "non-Polestar SW" such as non-homologated SW from a 3rd party company?
A - No, there will however be a control function in the back-end system highlighting if individual configuration applies to the cars in the OTA deployment.
Polestar SW Release Team will then decide if SW shall or shall not be deployed to those cars.
Unless the SW part-number is the same as a Polestar part number, if there is no conflicting data, then the SW will be installed.
If any non-Polestar/ non-proprietary SW from a 3rd party company is detected, this will be overwritten.

SW INSTALLATION FAILURE HANDLING

Q - Customer notice's the following message in the car - "The installation could not start - Your installation was interrupted due to failed conditions. Make sure that the car is locked, and the battery level is above 40% at time of installation. Please try again".
What can the customer do?
A - Please check that the High Voltage propulsion battery level has a minimum 40% SOC, and that all windows are in the upper closed position, as well as the doors/boot/hood are closed.
Also check if the car was in use or opened with the mechanical key when the scheduled installation was due to take place.

Q - If there is a message on the display in the car "Unsuccessful Update - The Software Update couldn't start. You will be notified when a new update is available.", what does it mean?
A - Some conditions was not met to be able start the update in the car.
Workshop technician can check in VIDA if the SW has Order Status "Cancelled" or "Failed".
If status "Cancelled", the OTA package has been withdrawn.
If status "Failed", see other text in this journal.

Q - Customer question: I had SW downloaded which couldn't be installed, but now it's gone, or I can't locate it?
A - A workshop technician can check in VIDA if the car has a QB and whether the SW has Order Status "Cancelled".
If there is a QB, then make an appointment for the customer to bring the car to workshop.
The SW was withdrawn from the car and to ensure the QB SW gets installed, car needs to go to workshop.

Q - Message in car "The update could not start – Service is needed in order for you to get the update". What does the message mean? Can I drive my car?
A - The car can be driven but the installation of the new SW failed.

A workshop technician can check in VIDA if the car has a QB and whether the SW has Order Status “Cancelled” or “Failed”.
If there is a QB, then make an appointment for the customer to bring the car to workshop.

Q - Customer may ask question related to that the SW installation started in the car but received no confirmation that the SW package was successfully installed.
A - By entering the VIN in VIDA; the workshop technician can find this information.
Using VIDA: Tab “Software History” - “Order History”, Order Reference: OTA and Order Status: Failed, Confirmed or Cancelled.
NOTE! The customers car needs to have connectivity with the cloud via the internal SIM card.

Q - What does the message mean?
“Software Update - The update could not complete, pay extra attention to error messages when using the car. Service is needed in order for you to the get update”.
Can I drive my car?
A - No, the customer should not drive the car since the SW installation attempt has failed.
The customer shall press the On Call button in the over-head console and ask for support.

Q - Question from Customer: “I had a message in my car but cannot remember it. (Or something similar)”.
A - A workshop technician can check in VIDA whether the SW has Order Status “Failed”.
If that is the case, please ask the customer to start their car, and ask if they can find the message again in the display in the car, “Software Update - The update could not complete, pay extra attention to error messages when using the car. Service is needed in order for you to the get update”.
The customer should not drive your car since the SW installation attempt has failed.
The customer shall press the On Call button in the over-head console and ask for support.

Q - The customer is unable to open the car after installed a SW update – what can be done?
A - The customer can enter the car with the mechanical key blade and press the On Call button in the over-head console or use the Polestar app to ask for support and towing to a workshop.

Q - How will the customer be contacted in the event that the car has experienced a “critical failure” and the OTA system has informed the Customer Care or RSA organization?
A - The customer will receive either an SMS push notification or a personal phone call.
NOTE: (Market dependent).

Q - What does “Critical Failure” mean?
A - “Critical Failure” means SW is missing in one or more of the ECU ´s and needs to be updated physically at a workshop using the VIDA workshop tool and a physical connection to the car.
This cannot be resolved by OTA SW update.

Q - After a successful OTA installation, are the DTCs cleared as they are when installing SW with VIDA?
A - No, the stored DTCs are not actively cleared during OTA installation, but depending on how the SW is implemented, it may be that the SW is overwriting the memory where the DTC’s are stored, it may vary from node to node.

Warranty claim info:
Normal warranty policy & procedures apply.

LABOR TIME:
Labor time subject to change without notice.

VEHICLE REPORT:
Please see TJ 35798 how to recover a failed OTA in the workshop with VIDA and if support is needed.