WG47 - Performing Navigation Map Update and Software Update for PCM and Instrument Cluster (Workshop Campaign)

Important:	**CRITICAL WARNING** - This campaign includes steps where control unit(s) in the vehicle will be programmed with the PIWIS Tester. The vehicle voltage must be maintained between 13.5 volts and 14.5 volts during this programming. Failure to maintain this voltage could result in damaged control unit(s). Damage caused by inadequate voltage during programming is not a warrantable defect. The technician must verify the actual vehicle voltage in the PIWIS Tester before starting the campaign and also document the actual voltage on the repair order. Please refer to Equipment Information EQ1401 for a list of suitable battery chargers/power supplies which should be used to maintain vehicle voltage.

Model Year: **2017**

Model line: **Macan (95B)**

Equipment:
- Navigation module for PCM (I-no. 7UG)
- Connect Plus (I-no. EL5)

Subject:
- **Porsche Communication Management (PCM) 4.0**
- **Instrument cluster**

Issue:
- **Map Update service**
- **Model improvement measures for Porsche Communication Management (PCM) 4.0**

Map Update service:
With the introduction of the new Porsche Communication Management system (PCM 4.0), customers of vehicles with a navigation module will be provided with updated maps free of charge for a certain inclusive period as part of the Map Update service.
The maps will be updated for the first time in the Map Update service using an SD card as part of this workshop campaign.

PCM software update:
In the course of annual model improvements, various functionalities of the PCM have been enhanced, optimisations have been implemented and the general performance of the system has been further improved at the same time.

These functional enhancements and optimisations must be implemented retrospectively even for vehicles manufactured before the model improvement measures were introduced. To this end, the PCM software will also be updated using an SD card.

Due to the changes to the PCM, the instrument cluster must also be re-programmed using the PIWIS Tester in order to ensure consistency between the displays in PCM and the instrument cluster.

A description of the topics and optimisations that are enhanced or implemented with the software update for PCM and the instrument cluster can be found in the following Technical Information: ⇒ *Technical Information '911000 PCM 4.0 integrated system: Complaints and repair instructions (01/16)'*.

| Porsche Connect: | In addition to the model improvements for the Porsche Communication Management (PCM) system, the range of Porsche Connect services has also been extended significantly once again. The extended range can be used in all vehicles with the Connect Plus option after updating the PCM software and completing registration in the Porsche Connect portal in early 2017. |

Overview: **Overview of the most important model improvement measures:**

Porsche Communication Management (PCM)

- Connect two phones to the PCM in parallel via Bluetooth®
- Optimisations to MyScreen (Drag & Drop) and new widgets
- Simplification of the device manager for connecting to other devices
- Actuation of Siri using Pus-to-Talk (PTK) switch on the steering column stalk

PCM navigation module (I-no. 7UG)

- Drag & Drop for stopovers: Simple re-organisation of stopovers using Drag & Drop

- Approach message for points of interest (POIs): The customer can be guided visually and acoustically to desired points of interest (POIs) as soon as he approaches them if he so wishes.

- Smart routing: If requested, the PCM learns from frequently driven routes at certain times and provides appropriate suggestions. The customer must have driven to the identical destination at least twice within the same time period for this. This function is deactivated by default. The customer must activate it.

Connect Plus (I-no. EL5)

- Simplified operation of Online Traffic: One icon is now available for activating traffic announcements and traffic flow.

- Additional navigation and Infotainment services: With the model improvements, all vehicles with PCM and the Connect Plus module can purchase and activate a wide range of additional navigation and Infotainment services. This requires access to the Porsche Connect portal and the Porsche Connect store where the customer can manage his profile and purchase or renew services.

- Online update of navigation maps (EU and USA only): With the model improvements, all vehicles with PCM and the Connect Plus module can use the new Online Map Update service in addition to the Map Update service.

Action Required:
- Update PCM software using an SD card
- Re-program instrument cluster using the PIWIS Tester
- Perform navigation map update using an SD card

ℹ **Information**

Overview of programming times for the various modules:

•	PCM update	approx. **45 minutes**
•	Navigation map update	approx. **45 minutes**
•	Re-programming instrument cluster	approx. **20 minutes**

ℹ️ **Information**

When the instrument cluster is re-coded, the **individual settings** implemented in the instrument cluster by the customer will be **lost** and are reset to the **default values** of the **country version** that applies to the vehicle.

After carrying out the campaign, therefore, please inform your customers that personal settings they have implemented in the instrument cluster will have to be **set again** and provide them with any **help and support** they need for setting the relevant options.

This affects the following settings in the Vehicle menu, for example:

- Lowering of door mirror on passenger's side during parking manoeuvres
- Locking settings
- Light & Visibility settings
- Units (kilometres/miles, Celsius/Fahrenheit, ...)
- Language

Affected Vehicles: Only the vehicles assigned to the campaign (see also PIWIS Vehicle Information). This campaign affects 17,859 vehicles in North America.

Required tools

Tools:
- Battery Charger/Power Supply - Suitable for AGM Type batteries, recommended current rating of 70A fixed voltage 13.5V to 14.5V. Refer to Equipment Information EQ-1105

- **9900 - PIWIS Tester 3** with PIWIS Tester test software version **33.700.000** (or higher) installed

or

- **9818 - PIWIS Tester II** with PIWIS Tester test software version **17.700.000** (or higher) installed.

- **SD memory cards for PCM update and navigation map update**

i **Information**

The PCM update is performed using an SD memory card for each specific region.

The SD memory cards for the PCM update listed below must be re-used as part of the workshop equipment and remain in the Porsche Dealer. The SD memory cards must not therefore be left in the vehicle or handed over to the customer.

The **SD memory cards for the PCM update** required for carrying out this campaign are **identical** to the SD memory cards required **as part of campaign WG39**.
Given this, the maximum number of SD memory cards that **may be ordered for each Porsche Dealer** depends on **how many vehicles will be worked on by the respective Porsche Dealer as part of workshop campaigns WG39 and WG47**.

The following specifications apply here:

Overview of SD memory cards for PCM update

Part No.	Designation – Region	Vehicle assignment
9P1 906 961 A	SD memory card for PCM update – North America – Mexico	I-no. ER3/ER4

Overview of SD memory cards for navigation map update

Part No.	Designation – Region	Vehicle assignment
9P1 909 000 H	SD memory card for navigation map update – North America – Mexico	I-no. ER3/ER4

i **Information**

To make it easy to determine which SD cards are required for performing the PCM update and navigation map update on each vehicle, the vehicles are assigned fixed campaign scopes.

The campaign scope assigned to the respective vehicle can be displayed by entering the vehicle identification number (VIN) in the 'Vehicle information' menu in PIWIS.

Based on the assigned campaign scope, the SD cards required for the PCM update and navigation map update can be determined using the overview of campaign scopes provided under ⇒ *Technical Information 'WG4700 Warranty processing'*.

Note: Each Porsche Dealer will receive 3 of the required SD memory cards for the PCM update and 3 SD memory cards for the navigation map update. If you require additonal need for SD memory cards, please create a PTEC/PAV for ordering insructions.

Preparatory work

NOTICE

Fault entry in the fault memory and control unit programming aborted due to low voltage.

- **Increased current draw during diagnosis or control unit programming can cause a drop in voltage, which can result in one or more fault entries and the abnormal termination of the programming process.**

⇒ **Before starting control unit programming, connect a battery charger or power supply, suitable for AGM type batteries, recommended current rating of 70A fixed voltage 13.5V to 14.5V.**

Procedure: 1   Connect a battery charger to the jump-start terminals in the engine compartment and switch it on.

2   Switch on the ignition using the **original driver's key**. For vehicles with "Porsche Entry & Drive", replace the control panel in the ignition lock with the original driver's key, if necessary.

Performing software update for Porsche Communication Management (PCM)

Procedure: 1   Switch on PCM.

2   Open the flap covering the drives on the PCM.

3   Remove any inserted SD cards from the SD card slots.
To do this, first press on the SD card to release it. Then, pull the SD card out of the card slot.

4   Insert SD card for the PCM update (Part No. 9P1 906 961 x) into the **left SD card slot** (SD 1) in such a way that the bevelled edge of the SD card is at the front right.

5   Press the •CAR" and •MEDIA" buttons on the PCM **for at least 3 seconds at the same time** to go to the Developer menu.

6   Select the **'Software update'** function in the **'Developer menu (SWDL)'**.

7   Select and confirm the installation medium **'SD1'**.

The status messages "Reading version description" and "Loading metadata" then appear.

8   Select and confirm the update scope **'Standard'**.

9   Select the option **'Start update'** in the display of devices in the footer.

10   Confirm the message "Update must not be interrupted" by pressing **'Start update'** again.

The PCM is then restarted and the message "Update will continue after restart" appears. The individual components and modules are then updated. The update progress is shown as a percentage for each module.

The update takes approx. 45 minutes.

The PCM is restarted several times during the update. The PCM screen remains dark for up to 3 minutes.

ℹ️ Information

If the software update is interrupted or if **error messages** are displayed (e.g. as a result of read errors), the update must be **repeated**.

11 When the update is finished, **'OK'** will appear next to the updated components and modules in the 'Summary of devices' display. Press **'Continue'**.

You are then prompted to perform the backup documentation process using the PIWIS Tester.

12 Connect the PIWIS Tester to the vehicle and switch it on.

13 If necessary, select the relevant vehicle type and start the diagnostic application.

14 Select the **PCM** control unit in the control unit selection screen ('Overview' menu) and press •F12" ("Next") to confirm your selection.

15 Call up the **'Maintenance/repairs'** menu.

Update confirmation

16 Select **'Confrimation of Update'** in the menu and press •F12" ("Next") to continue .

17 Read the information that is displayed and press •F12" ("Next") to confirm.

18 Start the update confirmation process by pressing •F8" ("Execute"). The backup documentation process is performed.

19 When the backup documentation process is complete, all status fields will be ticked.
If the backup documentation process is **not** completed successfully, the process must be **repeated**.
Then press •F12" ("Next") to return to the start page of the **'Maintenance/repairs'** menu.

20 Remove SD card for the PCM update from the left SD card slot on the PCM.
To do this, first press on the inserted card to release it. Then, pull the SD card out of the card slot.

Re-coding Porsche Communication Management (PCM)

Procedure: 1   Call up the **'Codings/programming'** menu in the **'PCM'** control unit.

2 Select the **'Automatic coding'** function and press
•F12" ("Next") to start coding ⇒ *Automatic coding*.
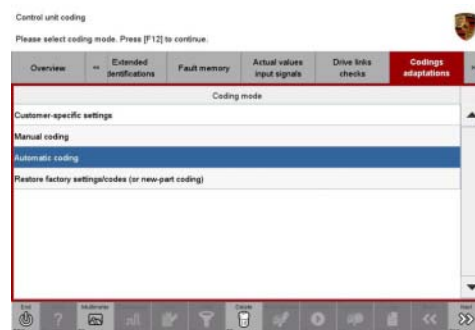
Automatic coding

3 When coding is complete, the message "Coding has
been completed successfully" is displayed and a tick
appears in the 'Status' box ⇒ *Coding successful*.

If coding is not completed successfully (error
message "Coding was not completed successfully"),
coding must be **repeated**.

4 Once coding has been completed successfully, press
•F12" ("Next") to return to the start page of the
'Codings/programming' menu.

Coding successful

5 Select the **'Overview'** menu and press •F11" ("Back") to return to the control unit selection screen.

6 Perform a function test on the PCM.

Performing navigation map update

Procedure: 1 Press the •Home" button on the PCM control panel.

2 Select the **'Set'** menu on the PCM touchscreen.

3 Select the **'Software update'** function.

4 Select the **'Load update'** menu.

5 Insert SD card for the navigation data update (Part No. 9P1 909 000 x) into the **left SD card slot**
(SD 1) in such a way that the bevelled edge of the SD card is at the front right.

6 Select source **'SD1'**.

The message "Searching for updates" then appears.

7 Once the update has been found, select the **'Navigation database'** component and press **'Start'** to
start the update.

The data is then downloaded. The PCM screen displays the message "Downloading" and shows the progress as a percentage.

The update takes about 45 minutes.

8   When the update is finished, the message "Component updated successfully" appears. Confirm the message with **'OK'** in order to complete the update.

9   Press the Back button on the control panel to return to the main menu.

10   Remove SD card for the navigation map update from the SD card slot.
To do this, first press on the inserted card to release it. Then, pull the SD card out of the card slot.

11   Any SD cards that were removed before starting the update must now be re-inserted into the SD card slots.

12   Perform a function test on the navigation system.

Re-programming instrument cluster

Procedure: 1   **Re-program the instrument cluster.**

The basic procedure for programming a control unit is described in the Workshop Manual ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Programming"'.*

For specific information on control unit programming during this campaign, see table below.

NOTICE

Use of a PIWIS Tester software version that is older than the prescribed version

•   **Measure is ineffective**

⇒   **Always use the prescribed version or a higher version of the PIWIS Tester software for control unit programming.**

| Required PIWIS Tester software version:	• PIWIS Tester 3:	**33.700.000** (or higher)
	• PIWIS Tester II:	**17.700.000** (or higher)
Type of control unit programming:	Control unit programming using the **"Campaign" function in the Additional menu** on the PIWIS Tester by entering a programming code.	
Programming code:	**S9J5N**	

Programming sequence:	Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. During the programming sequence, the instrument cluster is **re-programmed** and then **re-codedautomatically**. The display in the instrument cluster is switched off during programming. "bLF" appears on the digital speedometer display. The ignition is still active in the background. The display in the instrument cluster will be switched on again automatically as soon as programming is complete. **Switch the ignition off and then on again only when prompted to do so by the PIWIS Tester because otherwise, programming will be interrupted and will then have to be started again.**
Time required for programming and coding (approx.):	**20 minutes**
Software version programmed during this campaign:	**0647** Following control unit programming, the software version can be read out of the instrument cluster in the ⇒ 'Extended identification' menu using the PIWIS Tester.
Procedure in the event of error messages appearing during the programming sequence:	⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Fault finding"*.
Procedure in the event of abnormal termination of control unit programming:	Repeat control unit programming by entering the programming code again.
Procedure in the event of other malfunctions **following** control unit programming (e.g. analogue speedometer does not work):	• Switch off ignition and lock the vehicle. • Wait for at least 5 minutes before unlocking the vehicle again and switching on the ignition. • Check to see if the problem persists.

Resetting instrument cluster to factory settings

Procedure:

1 Select **'Instrument cluster'** in the control unit selection screen (**'Overview'** menu) and press •F12" ("Next") to confirm your selection ⇒ *Control unit selection – Instrument cluster*.

2 Once the instrument cluster has been found and is displayed in the overview, select the **'Codings/adaptations'** menu.

Control unit selection – Instrument cluster

3 Select **'Restore factory settings/codes'** and press •F12" ("Next") to start the process ⇒ *Resetting instrument cluster to factory settings*.

4 Once the settings have been reset successfully, press •F12" ("Next") to continue.

5 Select the **'Overview'** menu and press •F11" ("Back") to return to the control unit selection screen.
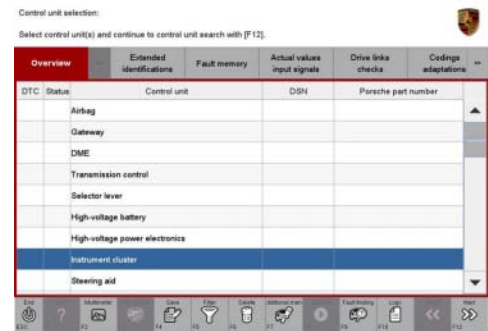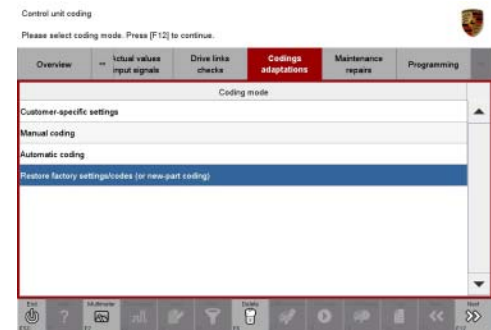
Resetting instrument cluster to factory settings

Concluding work

ℹ️ Information

The values for the Tyre Pressure Monitoring (TPM) system may be lost during re-coding of the instrument cluster.

If the Tyre Pressure Monitoring (TPM) system is reset, you must select **main menu** > **TPM** > **Settings** in the instrument cluster to reset the **tyre type** and **tyre size**. The wheel position values will then be re-taught in the control unit during the **test drive** (at a speed of over **25 km/h** or **15 mph**).

To set the tyre type and tyre size, see ⇒ Driver's Manual, chapter Instrument Panel and Multi-Function Display - 'Tyre Pressure Monitoring, TPM'.

Procedure:

1 Read out and erase all fault memories.

1.1 In the control unit selection screen (**'Overview'** menu), press •F7" to call up the **'Additional menu'** (⇒ *Control unit selection*).

1.2 Select the function **"Read all fault memories and erase if required"** and press •F12" ("Next") to confirm your selection ⇒ *Erasing fault memories*.
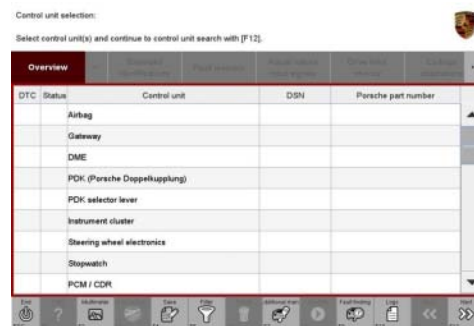

Control unit selection

The fault memories of the control units are read out.

1.3 Once you have read out the fault memories, check the fault memory entries.

Erasing fault memories

ℹ️ Information

If control units are found to have faults that are **not** caused by control unit programming, these must first be **found** and **corrected**. This work **cannot** be invoiced under the workshop campaign number.
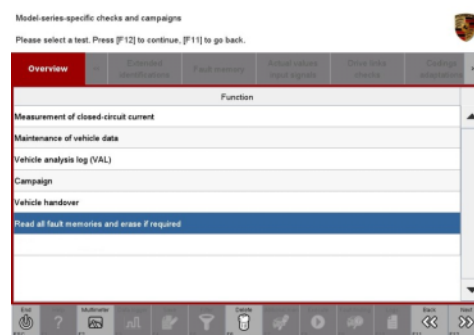
1.4 Press •F8" to delete fault memory entries.

1.5 Press •F12" ("Yes") in response to the question as to whether you really want to delete all fault memory entries.

The faults stored in the fault memories of the various control units are deleted.

ℹ️ Information

If the fault memories of individual control units cannot be erased, proceed as follows:

- Switch off the ignition.

- Disconnect the PIWIS Tester diagnostic connector from the diagnostic socket.

- Lock the vehicle using the driver's key.

- Wait approx. 1 minute before unlocking the vehicle again.

- Plug the PIWIS Tester diagnostic connector into the diagnostic socket again and restore communication with the vehicle.

- Read out the fault memories of these control units again and erase the fault memories separately.

2 Switch off the ignition.

3   Disconnect the PIWIS Tester from the vehicle.

4   Switch off and disconnect the battery charger.

5   On vehicles with Porsche Entry & Drive, replace the original driver's key in the ignition lock with the control unit again if necessary.

6   Enter the campaign in the Warranty and Maintenance booklet.

Warranty processing

Scope 1:   •   **Vehicles with I-no. ER3 or ER4 (North America, Mexico)**

Working time:	
Performing navigation map update and software update for PCM and instrument cluster	Labor time: **79 TU**

Includes: Connecting and disconnecting battery charger
        Connecting and disconnecting PIWIS Tester
        Performing update confirmation
        Re-coding PCM
        Resetting instrument cluster to factory settings
        Reading out and erasing fault memory	

Required tools:	
9P1 906 961 A SD memory card – PCM update	
9P1 909 000 H SD memory card – Navigation map update	
The number of SD cards provided for each Porsche Dealer depends on how many vehicles will have to be worked on by each Porsche Dealer as part of this campaign and campaign WG39 (see section ⇒ *Technical Information 'WG4700 Required tools'*).	
The SD memory cards must only be **invoiced once** for the first vehicle during **warranty processing**. Only the **working time** must be invoiced in the warranty claim for all other vehicles on which work is carried out as part of this campaign in the Porsche Dealer. Please note that SD cards invoiced as part of this campaign must not be invoiced again for workshop campaign WG39.	

Invoicing: ⇒ **Damage Code WG47 66 000, Repair Code 1**

Dealership Distribution Routing	Service Manager	_____	Shop Foreman	_____	Service Technician	_____	_____	_____	_____
	Asst. Manager	_____	Warranty Admin.	_____	Service Technician	_____	_____	_____	_____