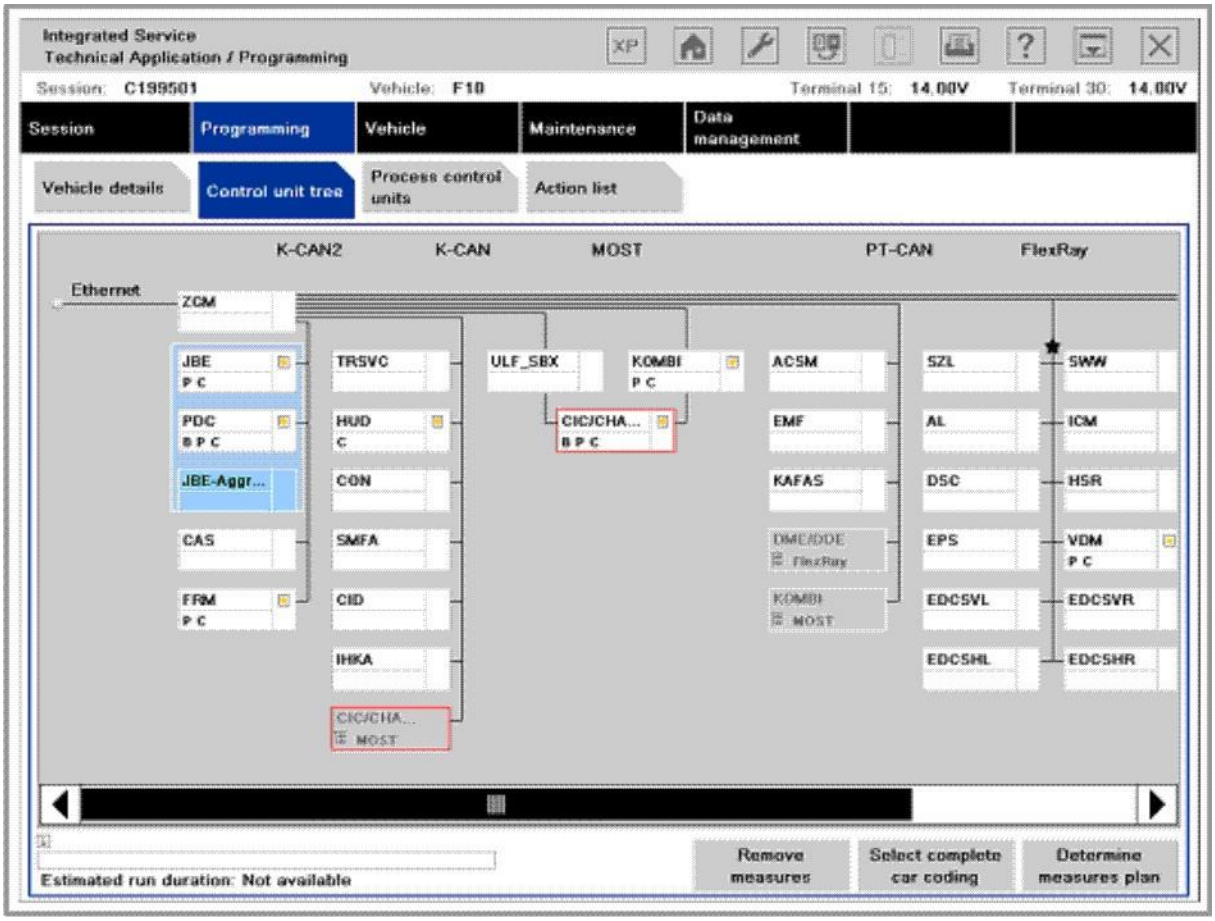
User documentation

Version P3.57.x

Programming system

Integrated Service Technical Application Programming (ISTA/P)



BMW Group

Technical process for vehicle programming in aftersales	Worldwide	Date
		10/2015
		Version P3.57.x

ISTA/P user documentation for BMW, MINI, Rolls-Royce and BMW i

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1. Changes to ISTA/P and to user documentation

The current ISTA/P user documentation is based on the following software:

Software medium	Version
ISTA/P (DVD)	P3.57.0
BMW navigation software (CD)	V32.0 (part number 01 59 0 141 891, index u)
Firmware ICOM	03.14.03

1.1. New functions in ISTA/P P3.57.x

- There are no new functions in ISTA/P P3.57.x

2. General information on ISTA/P and ISTA/P Online

2.1. General information regarding ISTA/P

Intended use

The ISTA/P programming system is application software of the ISPI network. ISTA/P can process all control units of BMW Group vehicles that can be encoded, programmed or require enabling.

ATTENTION!

Vehicle programming / encoding is only permitted if:

- A procedure in the ISTA workshop system indicates that this action is required
- An enabled measure for fault rectification is indicated on the part of BMW
- A conversion or retrofit is present
- Within the framework of a technical campaign
- Control units must be replaced
- Using the ISTA workshop system, it was not possible to detect any component-related faults.

User information:

This user documentation explains to the user in the workshop the main functions of ISTA/P and the procedure involved in vehicle programming/encoding.
To work with ISTA/P, knowledge of the combined effects of the ISPI components in the workshop network is of central importance. For more detailed information on the individual systems and network topics, refer to the handbooks specified below:

Component	User guide
ISTA (Integrated Service Technical Application)	User instructions
ICOM (Integrated Communication Optical Module)	Vehicle Interface Handbook
ISPA (Integrated Service Processes Application)	User guide for the technical administrator
ISID (Integrated Service Information Display)	User guide for device description

System components / subcomponents

ISSS:

The ISSS makes up the hardware that is used as the ISTA/P server.
Depending on requirements, the ISSS is equipped with a display screen, keyboard and mouse.
The ISTA/P application software for vehicle processing (vehicle programming/encoding) is installed on the ISSS and ISTA/P server.

ISID:

The ISID is a mobile end device with an integrated display and is used, for example, to operate the ISTA/P.

ICOM:

The ICOM is connected to the vehicle and linked with the network via the connection manager. The ICOM serves as the vehicle interface for vehicle processing (vehicle programming/encoding).

Simultaneously possible sessions:

At present, the number of vehicles that can be simultaneously programmed using one ISTA/P server programming system (ISSS) depends on the hardware used.

NOTE:

Hardware	Vehicle network 2000 or I-bus vehicles	Vehicle network 2020	Parallel operation vehicle electrical system 2000/2020
ISSS R6 **(with 3 or 4 GB RAM)**	Maximum **3** sessions	Maximum **2** sessions	In combination maximum **5** sessions, of which maximum **2** sessions with vehicle electrical system 2020

2.2. General information regarding ISTA/P Online

NOTE:

Ranges of functions marked with a star **(*)** are **not** available for ISTA/P Online, e.g. update and enabling of navigation system map data, updating Gracenote® **(*)**.

3. ICOM (Integrated Communication Optical Module)

ICOM is a multifunctional vehicle interface. It was developed for use in workshop and service applications and supports Service
Consultation, diagnosis and vehicle programming/encoding processes.

The ICOM system consists of the components A, B and C. These can be used to process all vehicles of the BMW Group:

- ICOM A for vehicles with OBD interface
- ICOM B together with ICOM A for vehicles with MOST direct access port
- ICOM C together with ICOM A for vehicles with OBD diagnostic socket

For detailed information on the vehicle interfaces, see the Vehicle Interface Handbook.

Installation locations of OBD, MOST connection options:

- BMW series, see "BMW: Installation locations of OBD diagnostics socket and MOST, page 171“
- MINI series, see "MINI: Installation locations of OBD diagnostics socket and MOST, page 196“
- Rolls-Royce series, see "Rolls-Royce: Installation locations of OBD diagnostics socket and MOST, page 217“.

The use and connection sequence of ICOM vehicle interfaces are described on the following pages.

4. ICOM connection sequence at vehicle

4.1. Use of ICOM A at OBD diagnostic socket

Index	Designation
1	Workshop network interface
2	USB interface
3	OBD interface

ICOM A should be used for connecting the ICOM to the OBD diagnostic socket of the vehicle. The OBD interface on the ICOM A can be angled, allowing it to be adjusted for OBD diagnostic sockets at different installation locations in the vehicle.

Connection sequence - ICOM A at OBD diagnostic socket:

- Switch on the ignition (terminal 15).
- Connect ICOM A to the workshop network via the workshop interface with the network cable
- Connect the OBD interface of the ICOM A to the OBD diagnostic socket on the vehicle.

4.2. Use of ICOM B at MOST port

Index	Designation
1	USB interface
2	MOST interface

For connecting ICOM to the MOST direct access port of the vehicle, ICOM B should be used in addition to ICOM A.

Connection sequence – ICOM B to MOST port:

- Switch on the ignition (terminal 15).
- Connect USB interfaces ICOM A and ICOM B to the USB cable
- Connect ICOM A via the network connection to the workshop network
- Connect ICOM B via the MOST interface to the MOST direct access port in the vehicle
- Connect the OBD interface of the ICOM A to the OBD diagnostic socket on the vehicle.

If the MOST direct access port or the ICOM is not detected, repeat the procedure.

4.3. Use of ICOM C on 20-pin OBD diagnostic socket

Index	Designation
1	20-pin diagnostic head interface
2	Connector for OBD interface

For connecting ICOM to the 20-pin OBD diagnostic socket of the vehicle, ICOM C should be used in addition to ICOM A.

Connection sequence – ICOM C to 20-pin OBD diagnostic socket:

- Switch on the ignition (terminal 15).
- Connect the OBD interface of the ICOM C to the OBD interface at ICOM A
- Connect diagnostic head interface to the 20-pin OBD diagnostic socket in the vehicle.

5. Preparation and subsequent evaluation of vehicle programming/encoding

The correct initial and subsequent evaluation of the vehicle is the fundamental prerequisite for trouble-free vehicle programming/encoding.

Preparations:

- Park the vehicle on a level surface
- If possible, protect the vehicle against direct sunlight
- Switch the engine off
- Let the brakes and brake system cool to the ambient temperature
- Observe the following safety information when working with a hybrid or electric vehicle:
  Repair work on intrinsically safe high-voltage systems must only ever be carried out by specially-trained experts. Each hybrid car and electric vehicle requires additional vehicle specific training with training achievement controls. Before work is started it is essential that the applicable safety information is read and noted. Work on live high-voltage components is expressly prohibited. Before every step that affects a high-voltage component, the high-voltage system must be de-energised and locked out against unauthorised start-up. If improperly used, there is the danger of resultant damage and the associated safety risks.
- In the case of a vehicle with a carbon fibre reinforced plastic (CFRP) body, observe the following safety information:
  Carbon has specific properties that distinguish it from steel and aluminium.
  Special training is required for working with a carbon body.
  The repair instructions must always be observed for all repair work on the vehicle. If improperly used, there is the danger of resultant damage and the associated safety risks.
- Shift the manual transmission to neutral or the automatic transmission to ”Park”
- Secure the vehicle against rolling by activating the electromechanical parking brake (EMF) and setting the parking brake.
- Make sure that the temperature of the gearbox oil is between -40 °C (-40 °F) and 85 °C (185 °F)
- Switch off all electrical consumers, lights and turn signals
- Make sure that headlights are not covered by protective covers

- Switch off the wiper/washer system. The wipers may be actuated during vehicle programming/encoding and encoding initialisation. Make sure that the wiper can move freely
- Make a note of all stored radio and TV frequencies and destinations
- Connect up a battery charger that is currently approved by the BMW Group in the engine compartment. Only chargers recommended by BMW are to be used in order to prevent damage to vehicle electronic components. All current chargers can be found in the ASAP portal under Building and equipment consulting > workshop equipment.
    - **F series e.g.F80, F82 with lithium starter battery:** In order to use the currently available chargers for lithium starter batteries, the following parameters must be adjusted:
      Charging voltage U = 14.0 volts
      Trickle charging voltage Uehl = 13.6 volts to 14 volts (depending on the charger)
    - **E-, F-, G-, I-series:** The battery charging mode is used during programming of the chargers "DBL1200", "DBL1600", "MultiCharger 1500", and "HS-1000". This battery charge mode is set at the factory on delivery of the devices and must not be changed. The set **maximum voltage of 14.8 volts** in battery charge mode is not to be exceeded.
    - We do not recommend chargers such as "DBL 430", "DBL800", "MultiCharger 750" or "MultiCharger 900" for ISTA/P programming. The "FSV mode with connected battery" is still used for these chargers. The **maximum voltage of 14.8 volts** is not to be exceeded. Possibly a charge parameter setting is necessary.
- Do not connect or disconnect the battery charger during vehicle programming/encoding. If the vehicle voltage is too low, it can cause vehicle programming/encoding to be aborted. Make sure that the vehicle voltage does not drop below 13 volts while vehicle programming/encoding is in progress.
- Check the cable routing. Cables routed through open windows could be damaged when the windows are automatically initialised. Do not route cables through open windows.
- Switch on the ignition (terminal 15), **before** the ICOM vehicle interface is connected to the vehicle

    - On vehicles with Comfort Access, the ID transmitter must be inserted in the ignition lock. If the ID transmitter is not inserted in the ignition lock, this could cause encoding to be aborted.
    - If there is no ignition lock on the model concerned, the ID transmitter must be inside the vehicle.
  - On vehicles with automatic terminal 15 shut-off (launched 03/2007), terminal 15 is automatically shut off by the door contact signal when the driver's door is opened or closed. Terminal 15 is permanently reactivated if the START-STOP button is then pressed. Make sure that the door contact of the driver's door is not activated during the programming routine. Connect the ICOM vehicle interface to the vehicle. Establish connection to the workshop network. For connection sequence, see "ICOM (Integrated Communication Optical Module), page 12"
- Carry out the vehicle test with the ISTA workshop system to make sure that all installed control units respond and any possible fault entries are read out.
- If an approved fault elimination measure (e.g. Technical Campaign) is assigned by BMW to the vehicle programming/encoding of a vehicle, then this vehicle test is not required.
- Existing faults (e.g. Check Control messages, functional faults and fault code entries) should be eliminated before vehicle programming/encoding .
- Preparations: All data carriers inserted and connected (CD, DVD, USB, iPod®, etc.) must be removed from their drives and data connections (Bluetooth) must be disconnected. Any data carriers still inserted in a drive or still connected could cause programming aborts.
- Switch off any mobile phones linked to the vehicle. If telephone calls are made during the programming this may lead to programming aborts.
- Before starting vehicle programming/encoding, make sure that the tailgate of the vehicle is closed (to prevent the luggage compartment lights from overheating).
- An update of the integration level can lead to loss of compatibility for mobile phones that have previously been connected and/or their software version. For compatibility check, see www.bmw.de/bluetooth, www.mini.com/bluetooth.
- F-, G-series (vehicle electrical system 2020). Select Personal Profile (Guest) and export all created user profiles via USB import / export socket in the glove box (backup).

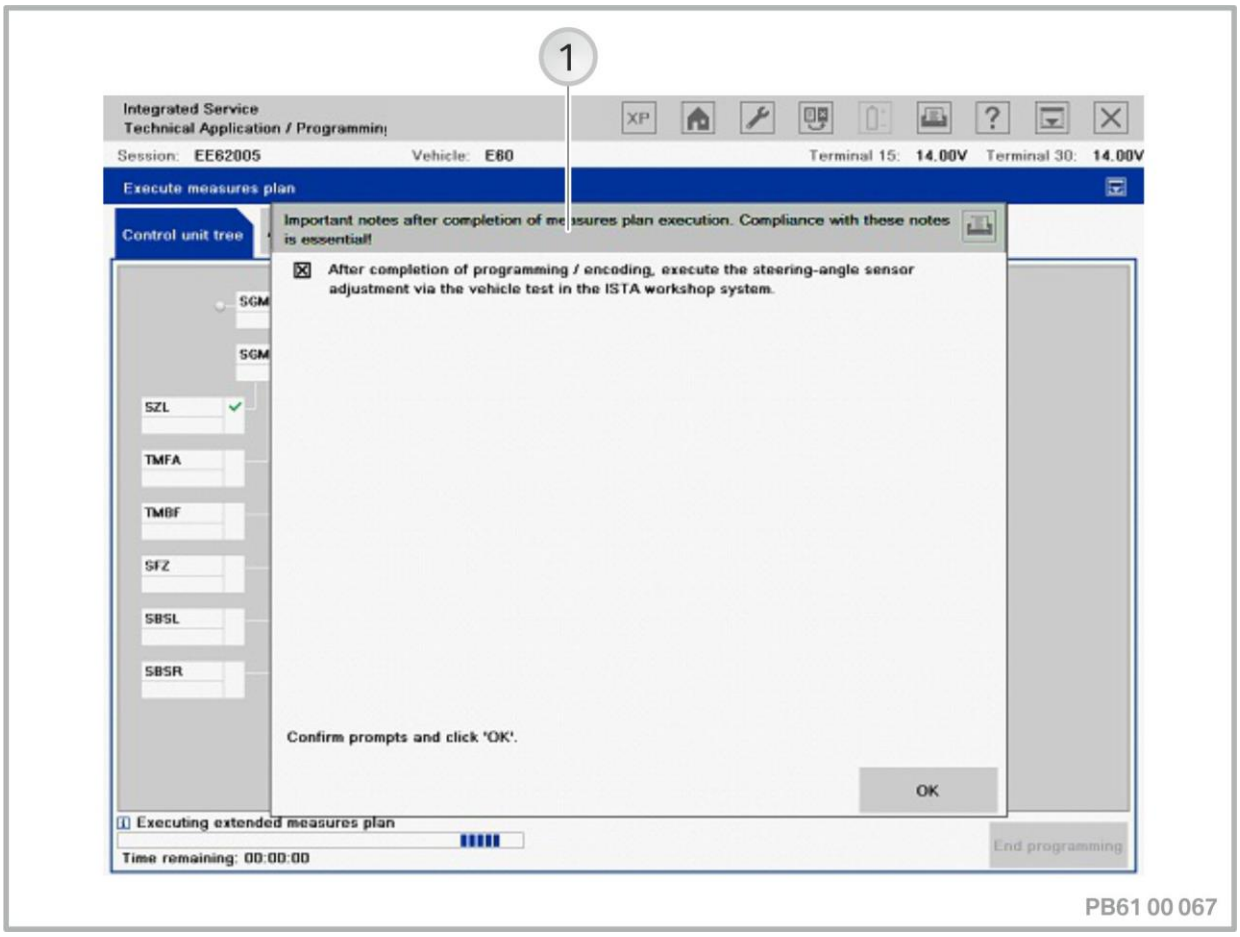
During programming/encoding:

- Take note of and comply with any prompts or instructions issued by ISTA/P
- Leave the ignition on and comply with the instructions issued by ISTA/P (e.g. for CAS)
- Do not cut off the connection between the workshop network, ICOM and vehicle
- After every action in the luggage compartment (e.g. loading / removing navigation DVD), close the tailgate of the vehicle (prevents the luggage compartment lights from overheating)
- Do not do anything in or on the vehicle during vehicle programming/encoding unless the ISTA/P system has issued an instruction to do so.

NOTE:

When vehicle processing with ISTA/P starts, i.e. when execution of the action plan begins, the required time for vehicle programming/coding is displayed in the ISTA/P. Determination of the duration of a programming session is linked to system-internal workflows which cannot be computed until the vehicle programming/coding starts. For this reason, a plausible display of the remaining time may take up to ten minutes. In addition, the duration represents a guide value and not an exact duration since it can be influenced by various factors in the course of vehicle processing. These include, for example, the required system-internal repeat loops of process steps, which cannot be included in the initial determination of the duration. The performance of various system components and the continuous changes in the network connection also have an influence on the remaining duration. This means that the initially estimated duration is a dynamic value that can change during vehicle processing.

Subsequent evaluation:



Index	Screen element
1	"Important notes after completion of measures plan execution. Compliance with these notes is essential!" Follow and note down if necessary. Activate checkboxes and press the "OK" button to acknowledge.

The follow-up work listed in the final report such as adjustments, initialisations, service functions, customer-initiated software updates, etc. is to be carried out in the vehicle test in the ISTA workshop system or manually. If this is not carried out successfully in ISTA/P, see "**Post programming initialisation (service function, initialisation, adjustment), page 71**". Each item of follow-up work is to be confirmed individually

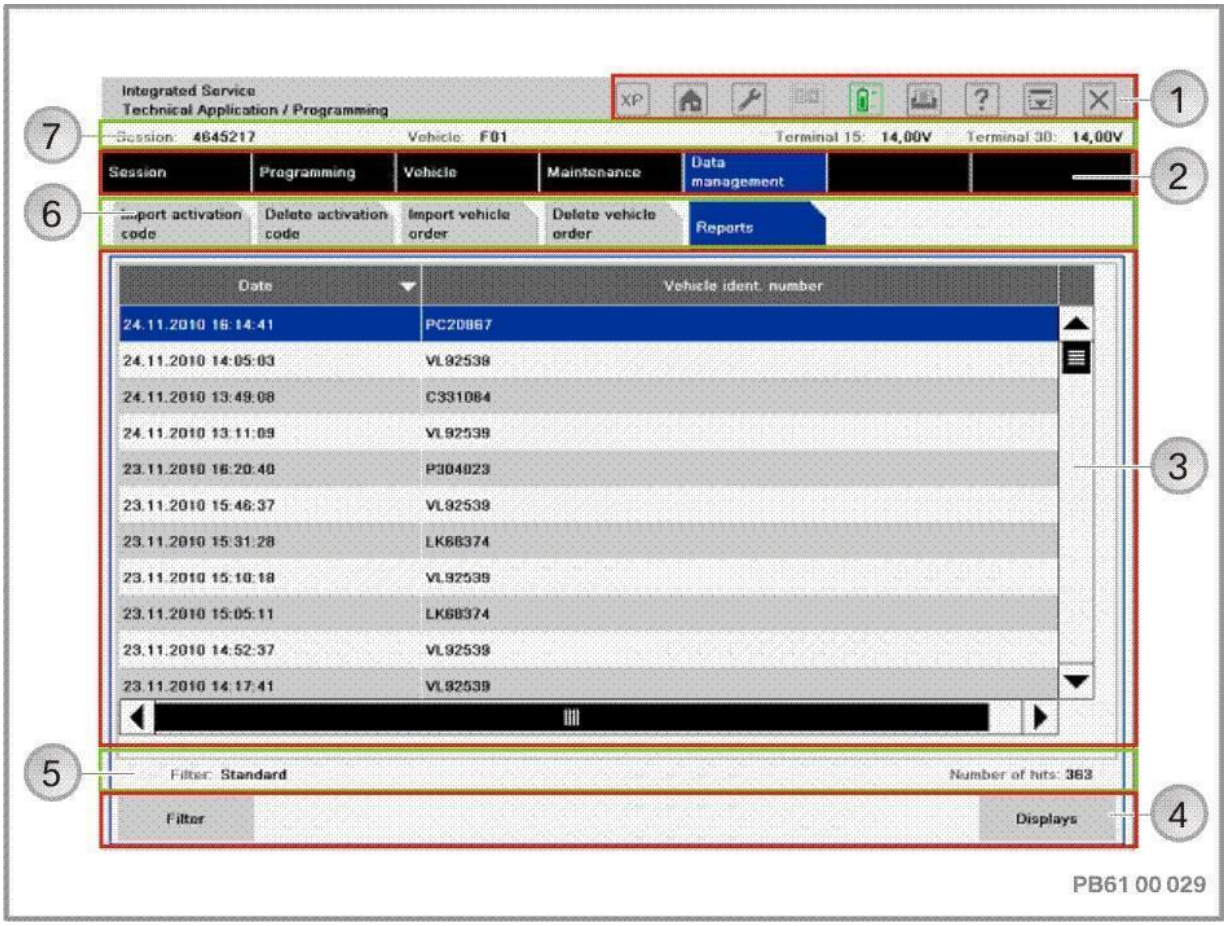
- Enter time and date information in vehicle via iDrive for correct CBS value calculation
- After vehicle programming/encoding, insert/connect all data carriers (CD, DVD, USB, iPod®, etc.) that were previously removed / disconnected in the drives and interfaces in the vehicle and check

- If there is **no** note referring to the ISTA workshop system, the initial diagnosis does not occur.
- For safety, leave the vehicle standing for at least five minutes (vehicle electrical system 2000 and vehicle electrical system 2020 vehicles) or 16 minutes (instrumentation bus vehicles) with terminal R OFF to allow all control units to go into the rest state.
  Note: Control units that do not go into "sleep mode" could cause errors relating to closed-circuit current!
- Concluding check that the vehicle is trouble-free
- Check all radio and TV frequencies and destinations previously noted and store manually as necessary
- Check the mobile phone connection in the vehicle and connect if necessary. Only connect approved mobile phones with an approved software version. See "Compatibility check". Non-approved mobile phones will lead to malfunctions
- F-, G-series (vehicle electrical system 2020). Import the Personal Profiles via USB import / export socket in the Personal Profile glove box.

6. Overview of ISTA/P functions (screen layout)

6.1. Screen layout

The following graphic in the "Programming" menu, "Edit control units" tab, shows a layout example of a typical screen mask.

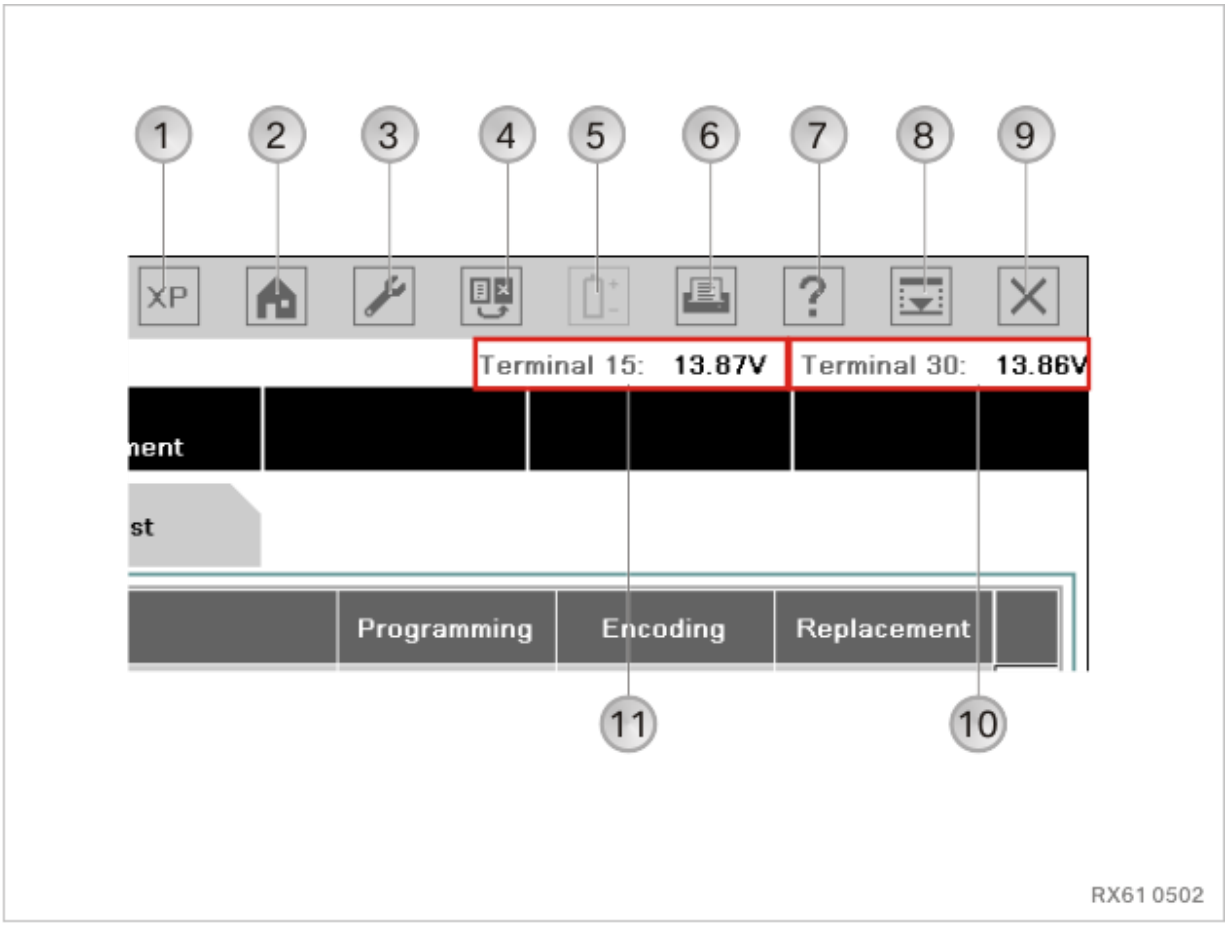


Index	Screen element
1	The icon bar is shown in all screen masks. The functions that are selected via the individual icons are described in the following.
2	Menu bar Switching between menus. The "Programming", "Vehicle" and "Maintenance" menus cannot be selected before a vehicle has been identified.
3	Working range Selection options and information are shown here.

	Click on a title of a column to sort the selection list in ascending and descending order. Sorting is indicated by a white triangle pointing up or down; in this case in "Date".
4	Action line Buttons are shown here depending on the workspace.
5	Hint Line The bottom part of the working area can contain an information line with additional details.
6	Tab Various tabs are shown here depending on the selected menu.
7	Header The vehicle identification number and the basic details of the identified vehicle are shown in the header. The vehicle identification number is only displayed when the vehicle has been identified by reading the vehicle identification number.

6.2. Symbol bar and voltage reading (see Index 1, page 23)

Functions and actions can be selected directly, also during a session, using the icons in the icon bar. The voltage of the connected vehicle is displayed below the icon bar.



Index	Screen element	Index	Screen element
1	Change to "Expert mode"	2	Switch to the menu "Session" (create new session) (ISTA/P start screen) Symbol flashes if the minimum voltage is undershot during a session running in the background
3	Switch to the "Administration" menu Display of dealer data and ISTA/P version	4	Switch to the "Connection manager"

5	State of charge of the accumulator is shown as a percentage (only with ISID)	6	Printing
7	Help for currently displayed page in ISTA/P	8	Minimise application
9	Close session/application program (selection in the pop-up)	10	Terminal 30 in Volts
11	Terminal 15 in Volts		

6.3. Overview of main functions (see Index 2, page 23)

The functions in ISTA/P can be accessed via certain paths. The following overviews show the menu in which the required function can be executed. Manual selections and information are normally not shown.

Menu	**Session** Is displayed after "Start ISTA/P"		
Tab	**Session Overview**	**Create New Session**	**Enter session name**
Function	Running programming sessions are displayed	Select ISTA/P server automatically/manually Select programming system Connection manager Select vehicle/interface, transfer to the Programming menu	Issue session name

Menu	**Programming** Is displayed after "Start ISTA/P" (option to change manually to the "Session", "Vehicle", "Maintenance" and "Data management" menus)		
Tab	**Vehicle details**	**Control unit tree** **edit control units** **(summarised)**	**Action List**
Function	Display of vehicle details e.g. integration level (works) or integration level (actual) are displayed Determine action plan, display transfer to "Action Plan" menu	Display of control unit actions (e.g. programming using manual input, programming, encoding, replacement, replacement follow-up) Action list (after control unit action) Control unit information Complete car coding Determine action plan, transfer to the Display action plan menu	e.g. integration level (works) or integration level (actual) are displayed Planned actions are shown Determine action plan, display transfer to "Action Plan" menu

Menu	**Vehicle** (1/2) Is displayed after "Create New Session"		
Tab	**Conversions**	**Conversions (encoding only)** **(only for vehicles with vehicle electrical system 2000).**	**Post programming initialisation**
Function	Retrofits Conversions	Retrofits Conversions (no update of the integration level)	• Available service functions are displayed • Read/delete fault memory

Menu	**Vehicle** (2/2) Is displayed after "Create New Session"		
Tab	**Immediate actions**	**CKM**	**Vehicle actions**
Function	e.g. • Write down system time and date • Delete transport mode • Set transport mode • Display/delete fault memory	Car and key memory settings	• Update of navigation system map data (HDD update)* • Enable map data for navigation system* • Update Gracenote®* • Import vehicle order • Select compete car coding

Menu	**Maintenance** Not yet set up.

Menu	**Data management**		
	Is displayed after "Start ISTA/P" and after "Create New Session"		
Tab	**Import/delete enabling code (summarised)**	**Import/delete vehicle order (summarised)**	**Reports**
Function	Import the enabling code	Import vehicle order	Reports of previous sessions are shown
	Enter short enabling code		
		Delete imported vehicle order	
	Delete imported enabling code		

Menu	**Display action plan** (1/2) Is displayed after "Determine action plan"		
Tab	**Action plan**	**Control Unit Tree**	**Action List**
Function	Action plan is shown	Planned actions are shown Action List Control Unit Information Accept action plan, action plan is executed	Planned actions are shown Accept action plan, action plan is executed

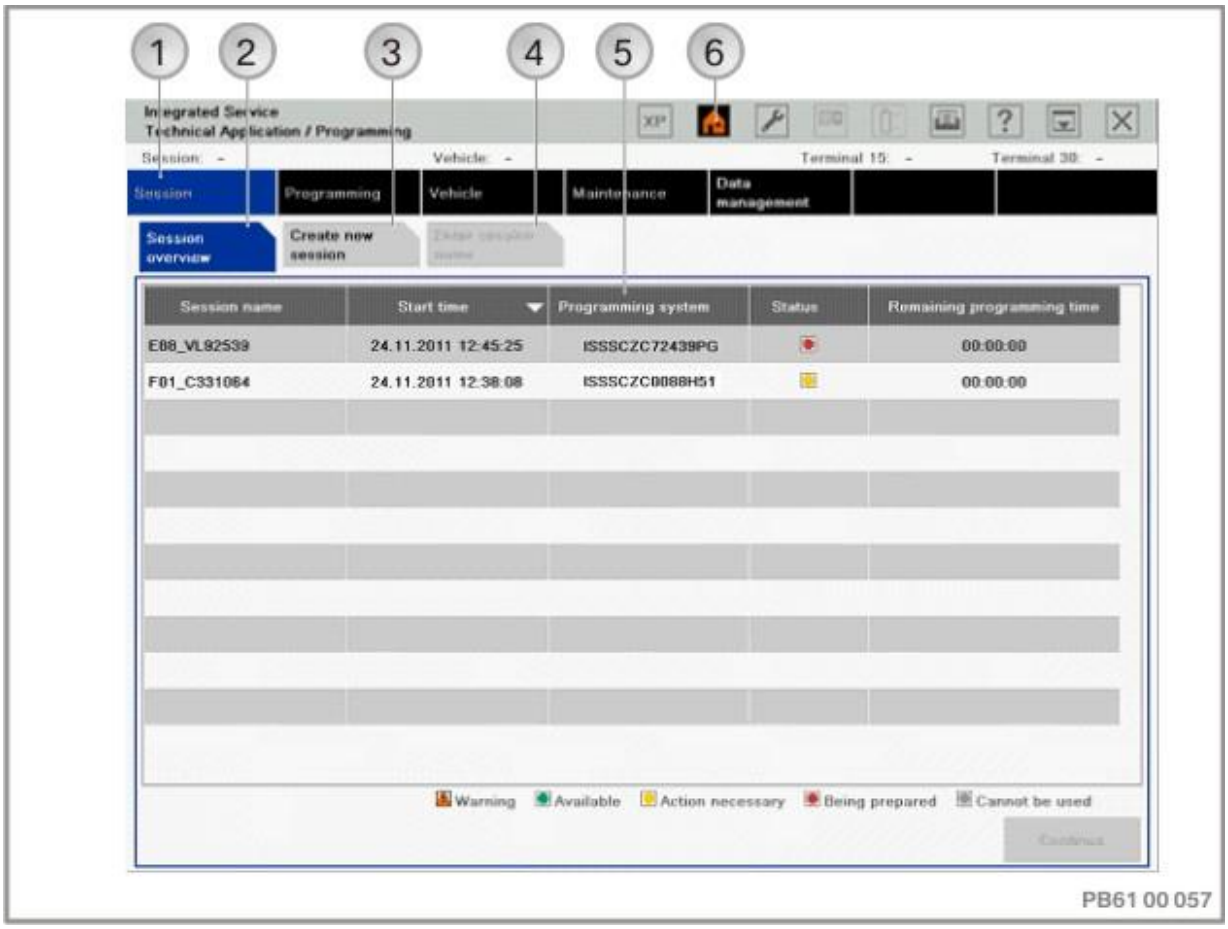
Menu	**Display action plan** (2/2) Is displayed after "Determine Action Plan"		
Tab	**Order list**	**Enabling code list**	
Function	Control units to be replaced are shown together with the order number	Imported enabling codes are displayed	

Menu	**Measures plan execution completed** Is displayed after "Accept Action Plan"		
Tab	**Final Report**	**Control Unit Tree**	**Action List**
Function	Final report is shown End session, switch to "Session" menu	Executed actions are shown Action List Control Unit Information End session, switch to "Session" menu	Executed actions are shown End session, switch to "Session" menu

7. "Session" menu (create new session)

The "Create new session" procedure is described on the following pages.

Graphical user interface for remote control of the ISTA/P server (ISSS):



Index	Screen element	Index	Screen element
1	"Session" menu	2	"Session overview" tab, Existing sessions can be selected and adopted
3	"Create new session" tab	4	"Enter session name" tab, rename current session
5	Detected programming systems (ISTA/P servers) are displayed	6	Switch to the "Session" menu Symbol flashes if the voltage drops below the minimum voltage during a session running in the background.

If the voltage drops below the minimum voltage during a session (terminal 15, terminal 30), the session concerned is displayed with a status of "Warning".

Symbol	Status	Symbol	Status
Warning	Warning	Green	Available
Yellow	Action necessary	Red	Being prepared
Grey	Can not be used		

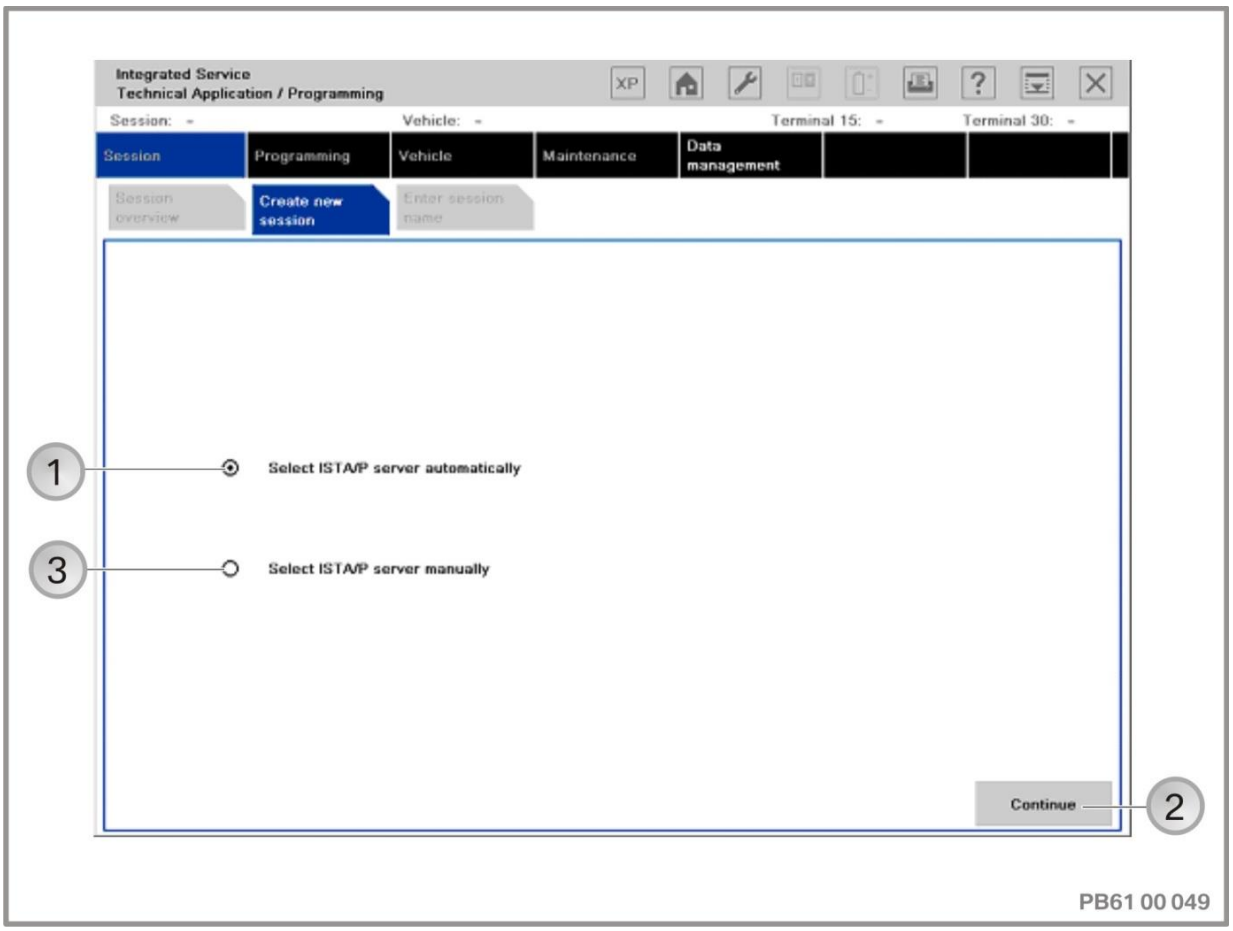
Current sessions are shown together with status on the start screen.
Proceed as follows to create a new session:

- Select "Create new session" tab

NOTE:

- To guarantee a clear assignment of programming systems, the designations for the programming systems are displayed in ISPI version 3.0.0 as a combination of the respective ISTA/P server (e.g. ISSS) and a serial number, e.g. "ISSSCZC72439PG".

7.1. Select programming system (ISTA/P server) automatically/manually:



Index	Screen element	Index	Screen element
1	Select ISTA/P server automatically	2	"Next" button, to confirm the selection
3	Select ISTA/P server manually		

If the ISTA/P server is selected automatically, the programming system (ISTA/P server) with the lowest number of current sessions is selected. If the number of active sessions per ISTA/P server is the same, any programming system is selected automatically.
If "Select ISTA /P server manually" is selected, the programming system is selected manually.

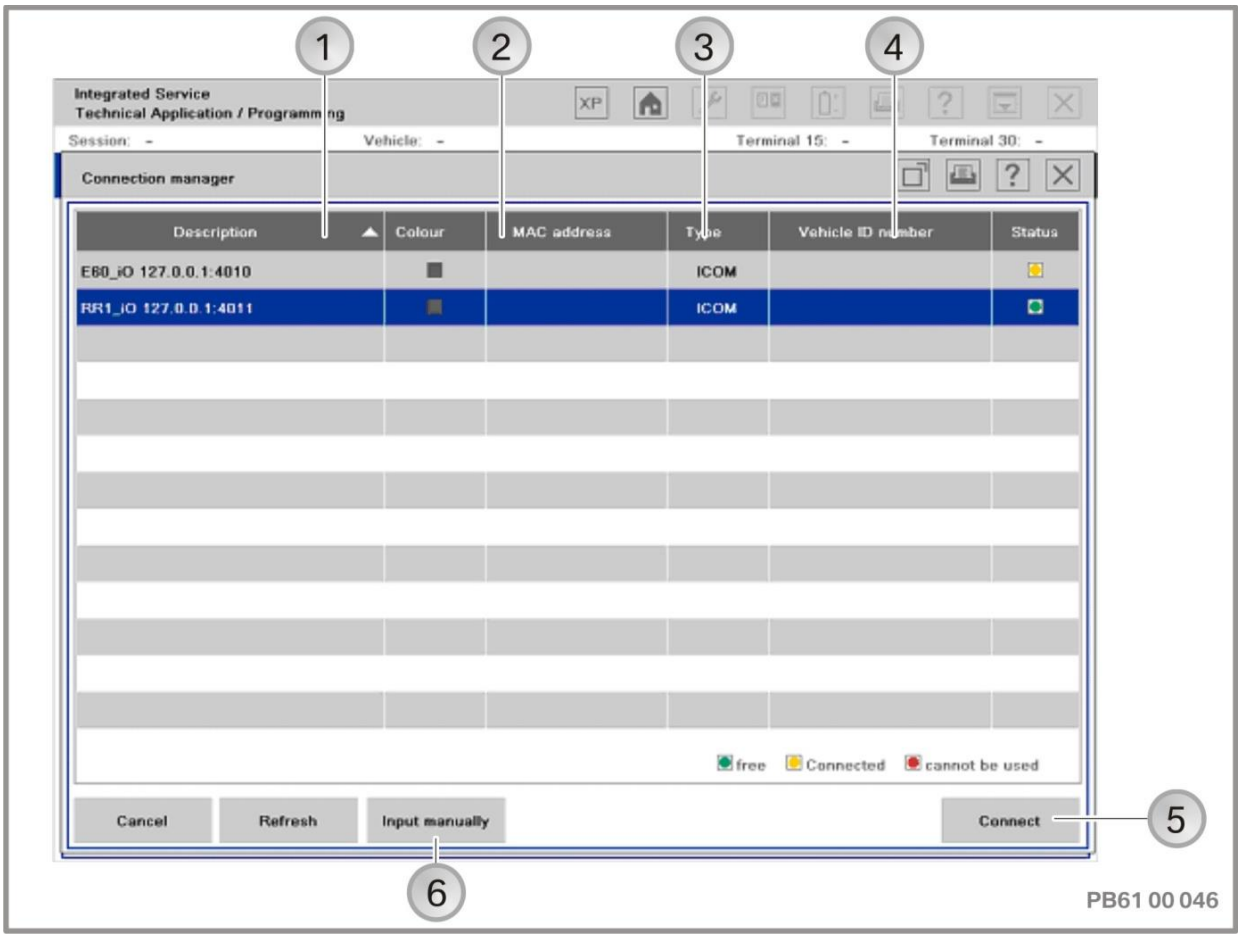
- Select ISTA/P server automatically/manually

NOTE:

Automatic selection is limited to two sessions. A corresponding error message is shown if an attempt is made to start a further session.
This restriction, however, does not represent a hard limit. When the ISTA/P server is selected manually, further sessions can be started up to the specified limit.

7.2. Select programming system (ISTA/P server) (for automatic session selection):

Connection manager

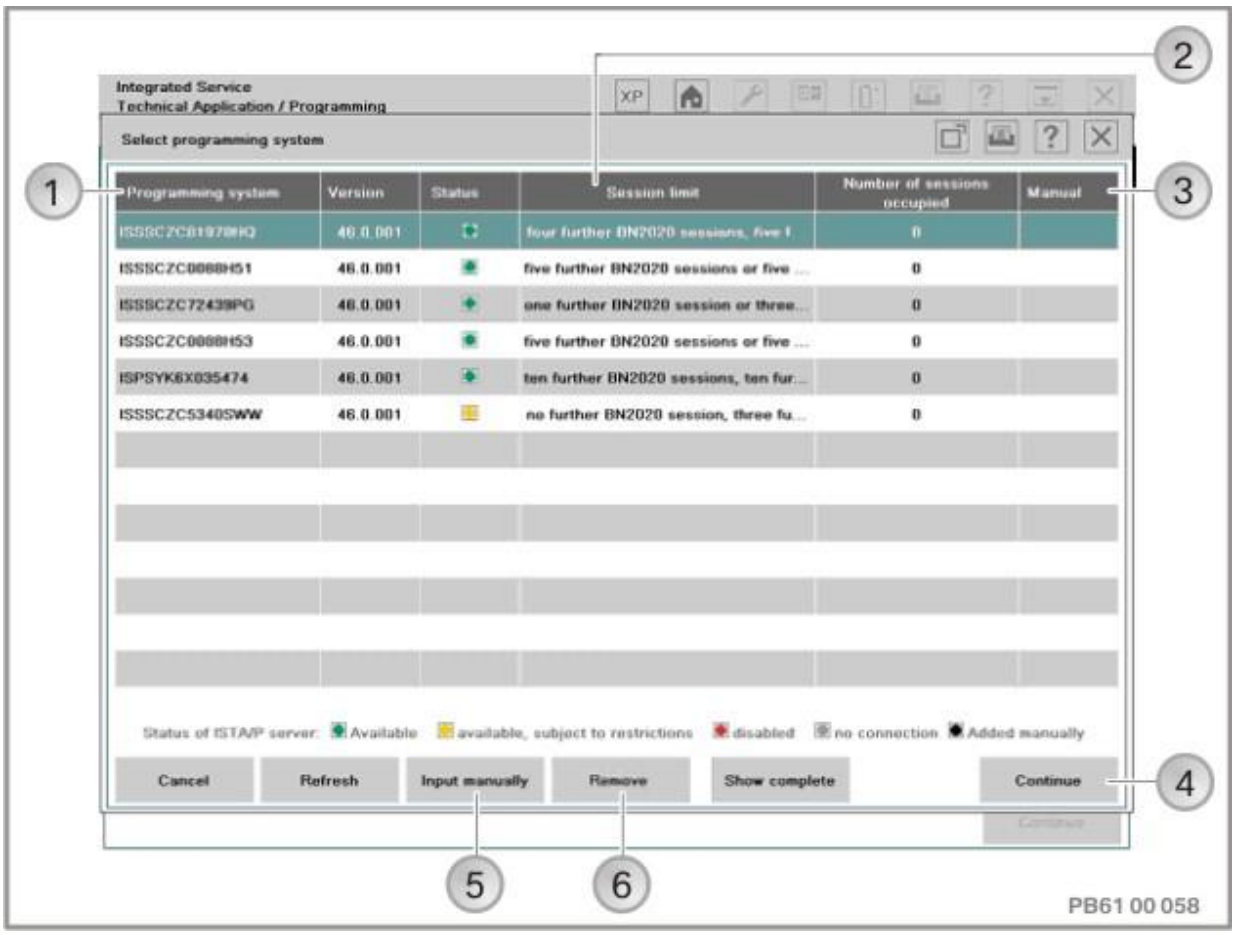


Index	Screen element	Index	Screen element
1	Interface designation	2	MAC address
3	Type of interface	4	Vehicle identification number of connected vehicle
5	"Connect" button	6	Manual input of the ICOM IP address

The detected interfaces (ICOM) are displayed with their status.			
Symbol	Status	Symbol	Status
Green	ICOM free	Red	ICOM can not be used
Yellow	ICOM connected		

Select a free ICOM from the list and press the "Connect" button to acknowledge

7.3. Select programming system (ISTA/P server) (for manual session selection):



Index	Screen element	Index	Screen element
1	Detected programming systems (ISTA/P servers) are displayed	2	Session limit; sessions still possible are displayed
3	Number of sessions occupied	4	"Next" button
5	manual input	6	Removal of a manually entered server IP address

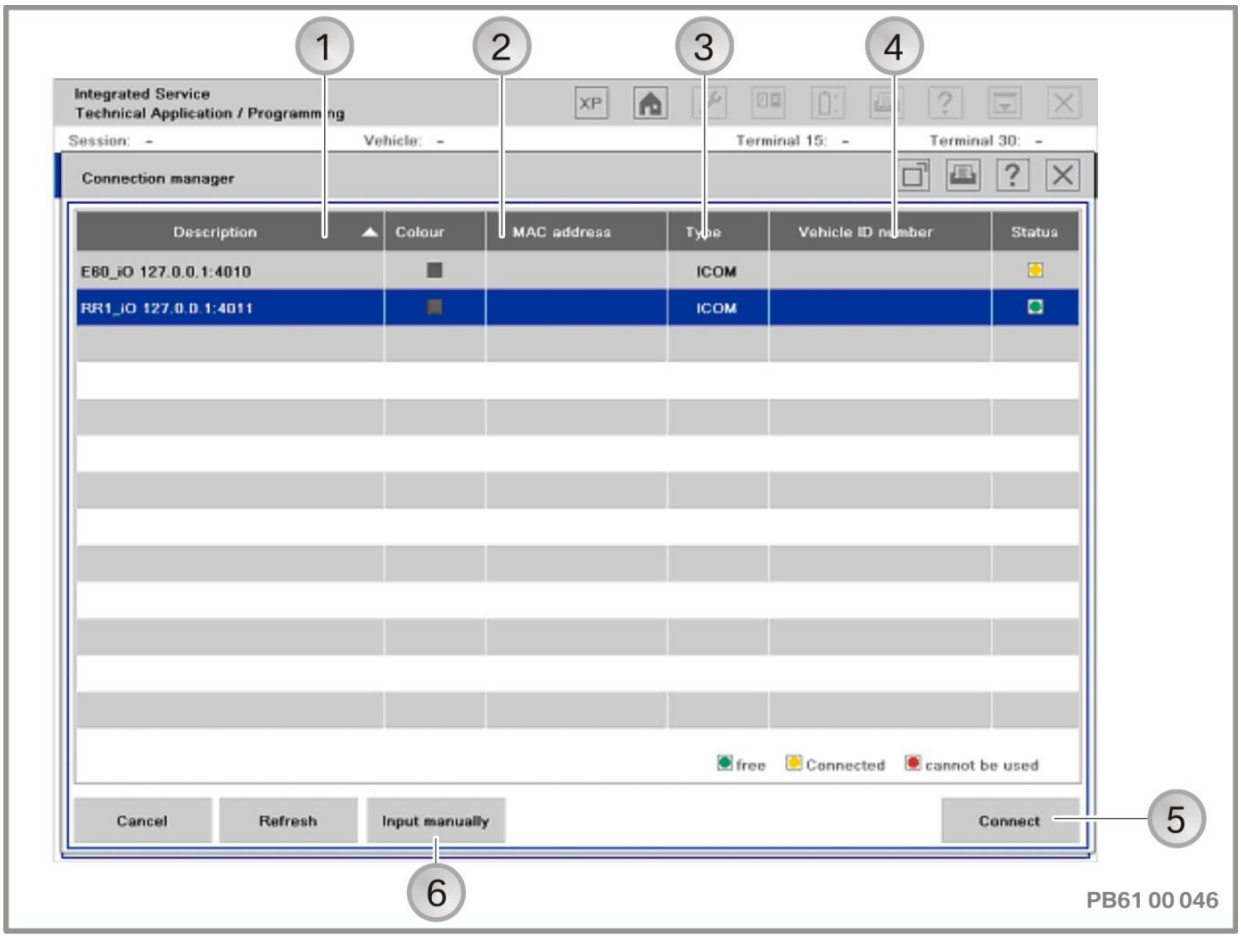
The detected programming systems (ISTA/P servers) are displayed with their status.

Symbol	Status	Symbol	Status
Green	Available	Red	Blocked
Yellow	Limited availability	Grey	No connection to the ISTA/P server
Black	Added manually		

Alternatively, the IP address of an ISTA/P server can be added manually.

- Select an available programming system and press the "Next" button to acknowledge.

Connection manager:



Index	Screen element	Index	Screen element
1	Interface designation	2	MAC address
3	Type of interface	4	Vehicle identification number of connected vehicle
5	"Connect" button	6	Manual input of the ICOM IP address

The detected interfaces (ICOM) are displayed with their status.

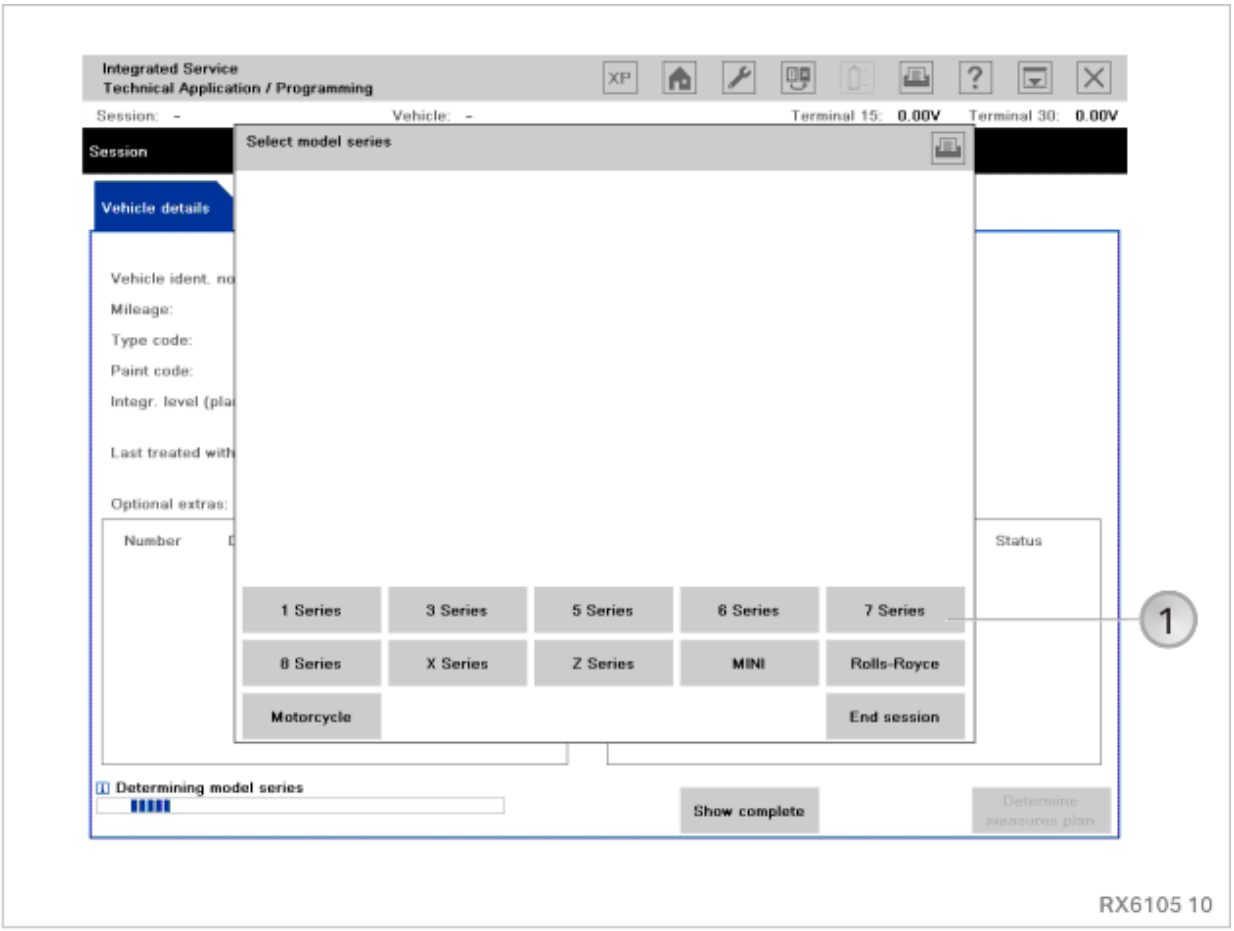
Symbol	Status	Symbol	Status
Green	ICOM free	Red	ICOM can not be used
Yellow	ICOM connected		

- Select a free ICOM from the list and press the "Connect" button to acknowledge

If automatic determination of the model series fails, the vehicle can be determined manually.

- Enter the vehicle identification number and confirm with "OK"

7.4. Selection of the "Select vehicle identification number manually" button is followed by selection via product line and model series:



Index	Screen element
1	"Series" button, selection of the product line

- Select the product line by clicking on the corresponding button
- Select the model series by clicking on the corresponding button

NOTE:

The vehicle order or central encoding key is read out. Refer to chapter "Data management" menu, page 45 if the vehicle order/central encoding key cannot be read.

NOTE:

If the vehicle does not respond correctly during the vehicle identification (e.g. terminal 15 missing, gateway ZGM does not route), a required measure is issued. A special measure is issued if the gateway of a control unit (z. B. CIC, SIM) or the control unit does not correctly respond itself during determination of the target context. See “Mandatory and special measure, gateway repair, page 105“.

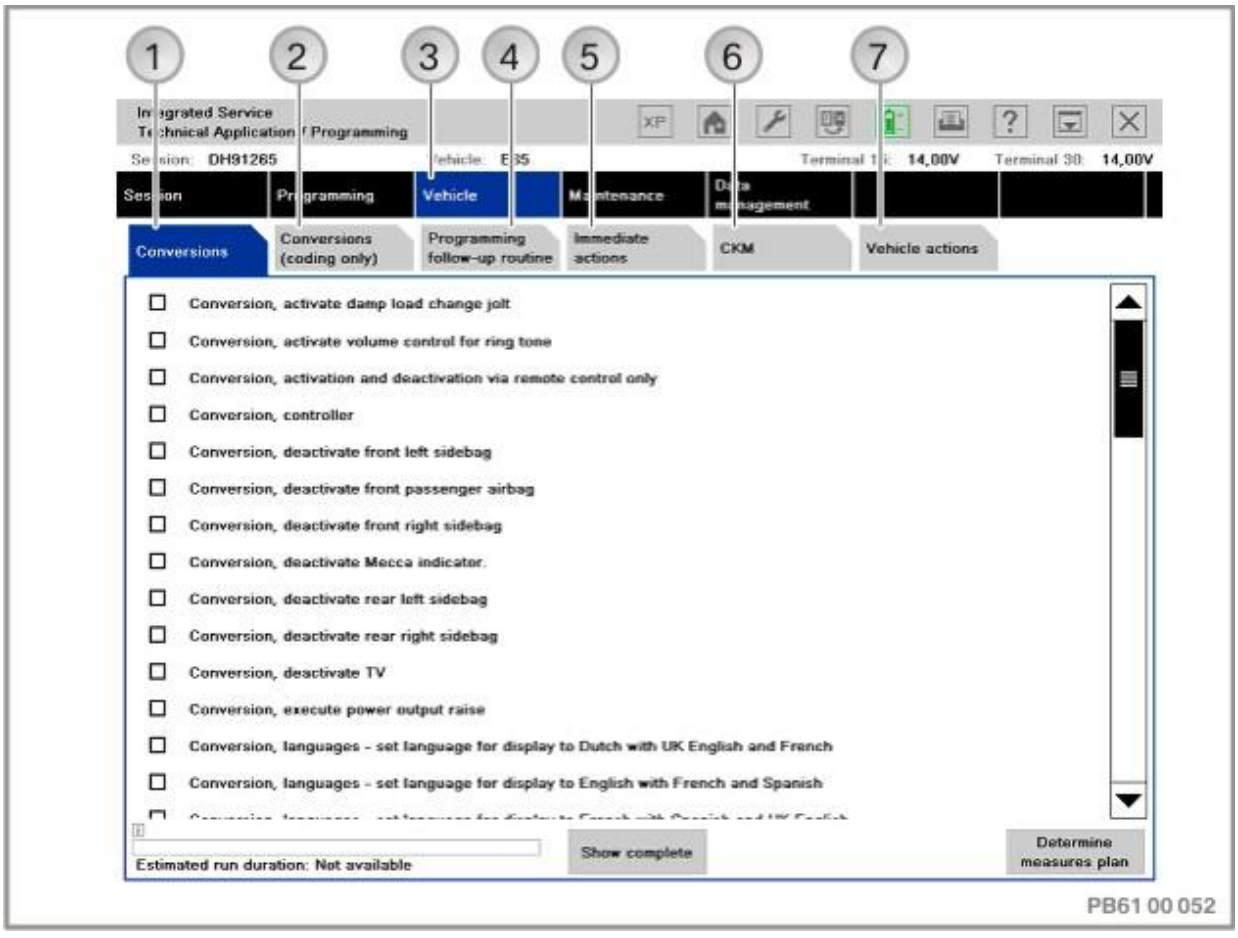
For further vehicle programming/encoding procedure, see vehicle-specific section "Vehicle programming/encoding":

- "BMW: Programming routine for F-, G- and I-series, page 133"
- „BMW: Programming routine, E-Series from E36, page 148" (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93)
- "BMW: Programming routine, BMW E-Series E31, E32, E34, page 163"
- "MINI: Programming routine, page 177"
- "Rolls-Royce: Programming routine, page 200 ".

8. "Vehicle" menu

If ISTA/P is in the "Programming" menu, is switch is possible to the "Vehicle" menu. The following actions can be added to programming in the "Vehicle" menu:

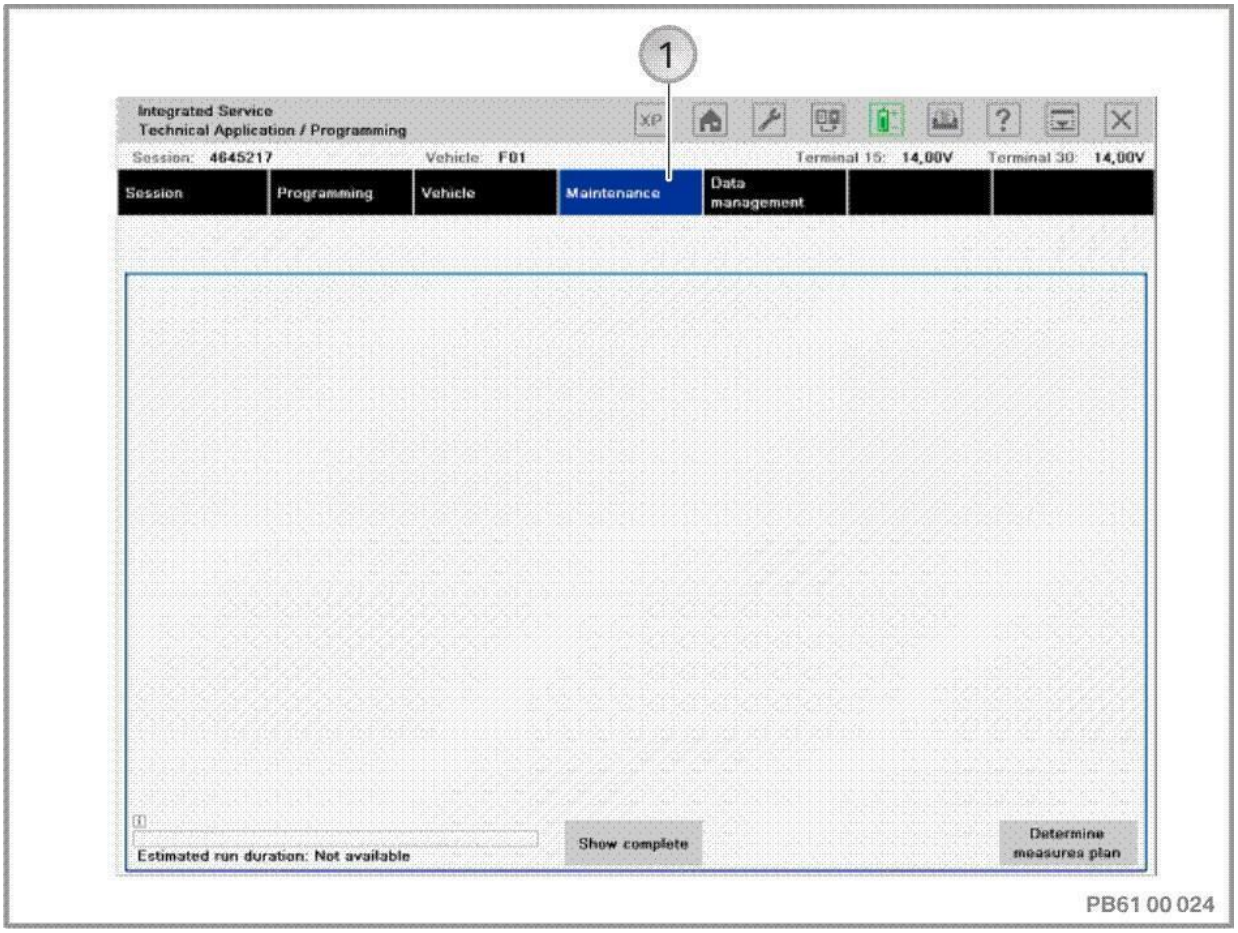
- Carrying out conversion and retrofitting, see "Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes, page 55“
- Post programming initialisation, see "Post programming initialisation (service function, initialisation, adjustment), page 71“
- Immediate actions, see "Immediate actions (executing service functions without action plan / or final report), page 76“
- Adjust CKM values, see "Car & Key Memory (CKM), page 67“
- Vehicle actions (e.g. HDD-Update*, see "Updating and enabling navigation system map data, updating Gracenote®, page 118").



Index	Screen element	Index	Screen element

1	"Conversions" tab available conversions and retrofits are displayed	2	"Conversions (coding only)" tab (for vehicles with vehicle electrical system 2000 only). Available conversions and retrofittings are displayed (no update of the integration level)
3	"Vehicle" menu	4	"Post programming initialisation" tab • Available service functions are displayed • Read/delete fault memory
5	"Immediate measures" tab, e.g. • Write down system time and date • Delete transport mode • Set transport mode • Display/delete fault memory	6	"CKM" tab
7	"Vehicle actions" tab: • Updating of the navigation system map data (HDD update)* • Enable map data for navigation system* • Update Gracenote®* • Import vehicle order • Select complete car coding		

9. "Service" menu

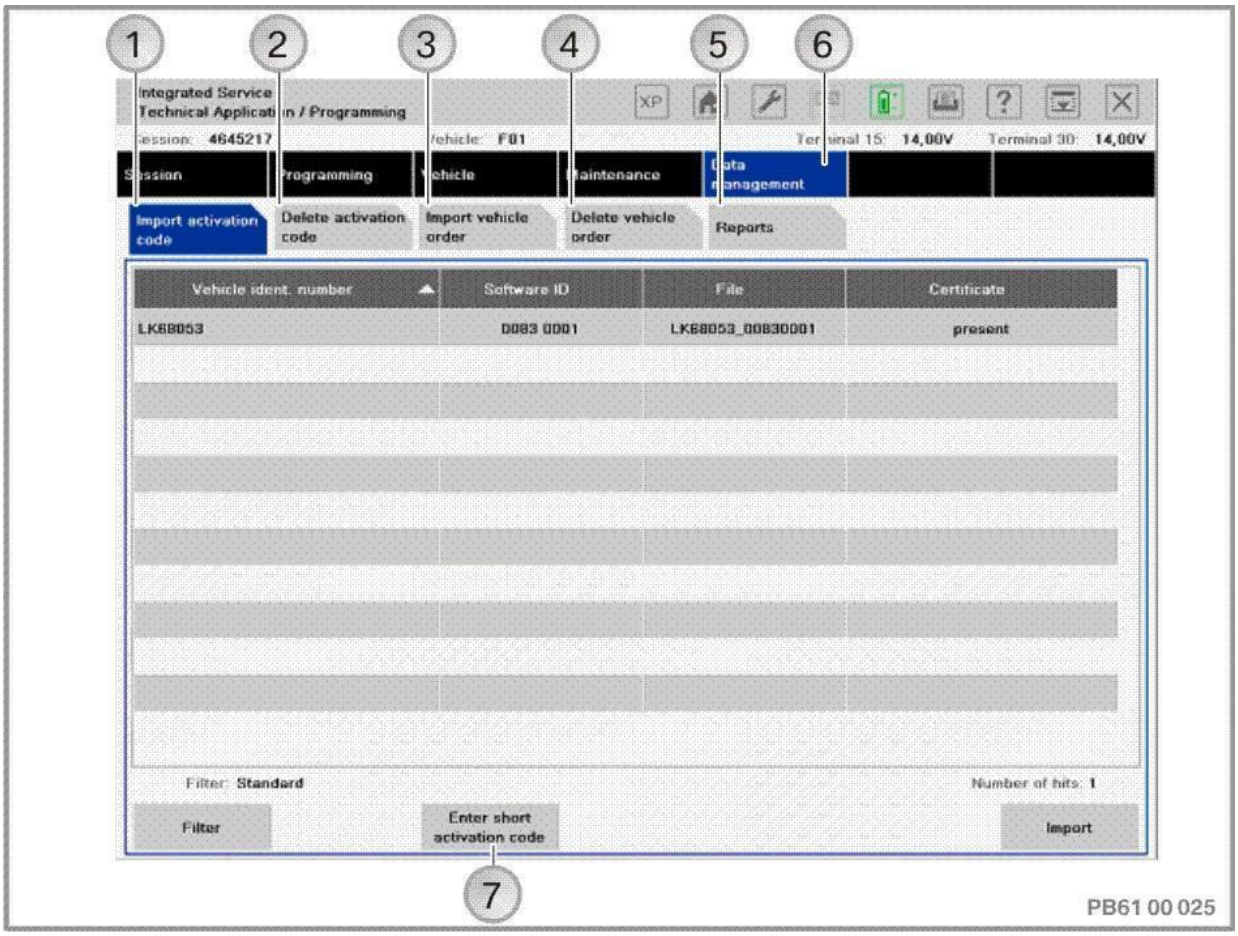


Index	Screen element
1	"Service" menu

At present no functions can be executed for passenger vehicles in the "Service" menu. The menu will be set up at a later point in time.

10. "Data management" menu

The "Data management" menu button is used to import and manage enabling codes and vehicle orders and/or central encoding keys. Furthermore, the final reports of previous sessions can be viewed.



Index	Screen element	Index	Screen element
1	"Import enable code" tab	2	"Delete enabling code" tab, delete imported enabling codes
3	"Import vehicle order" tab	4	"Delete vehicle order" tab, Deletes imported vehicle orders
5	"Reports" tab Previous sessions are shown together with the final report	6	"Data management" menu
7	Enter "Short activation code" button, manually enter short activation code		

10.1. Importing vehicle order into data management (see index 3, page 45)

The following data are necessary to generate the vehicle order:

- Which conversions/retrofits are to be carried out and/or which fault has occurred.
- Seven-digit vehicle identification number,
- Dealer number

NOTE:

The vehicle order for conversions and retrofits is ordered through the ASAP portal. To eliminate errors, the vehicle order can be ordered through the subsidiary or the regional office.
To import the vehicle order into the vehicle, no IBAC enabling code is required.
The vehicle order is downloaded in the form of a compressed XML-file (ZIP file). The ZIP file must be unpacked and filed on the "root directory" of the data carrier (e.g. "F:\", the top level directory of the drive). The name for the vehicle order must be "xmldb.xml" or "VIN (last 7 digits of vehicle identification number).xml".
The diversity of USB storage media on the market means that it can not be guaranteed that every USB data storage medium will work with ISTA/P.

All the vehicle identification numbers where the vehicle orders are in the database of ISTA/P are displayed in a selection list in the Data management menu. The user can select a vehicle identification number and have the corresponding vehicle order displayed. The user can also search for a vehicle identification number by changing the sorting function.

User action	Result
• Select the "Data management" menu • Select " Import vehicle order" tab	The "vehicle identification number" for which vehicle orders or central encoding keys are available is displayed.
Press the "Import" button to acknowledge.	A dialogue box with a prompt to insert the data carrier appears.
Insert data carrier in ISTA/P server (ISSS or ISPS) or establish connection between ISTA/P server and USB storage media. • Press the "OK" button to acknowledge.	The "Interchangeable data medium has been read" dialogue field appears.
• Press the "Start import" button to acknowledge.	Vehicle order is imported into the data management.

10.2. Importing enabling code into data management (see index 1, page 45)

Software enabling in a number of control units can be carried out with ISTA/P (e.g. when programming the Car Information Computer (CIC), an enabling code must be imported to enable the optional equipment "Extended Voice Control").
In ISTA/P, it is possible to import enabling codes for a vehicle even before you process the measures plan. All imported enabling codes are saved within the ISPI network and are available for future sessions without having to import them again.

User action	Result
Select "Import enabling code" tab	The vehicle identification numbers for which enabling codes are available are displayed.
Press the "Import" button to acknowledge.	A prompt to insert the data carrier appears.
Insert data carrier in ISTA/P server (ISSS or ISPS) or establish connection between ISTA/P server and USB storage media. If necessary select enabling code. Press the "OK" button to acknowledge.	Enabling code is imported into the data management.

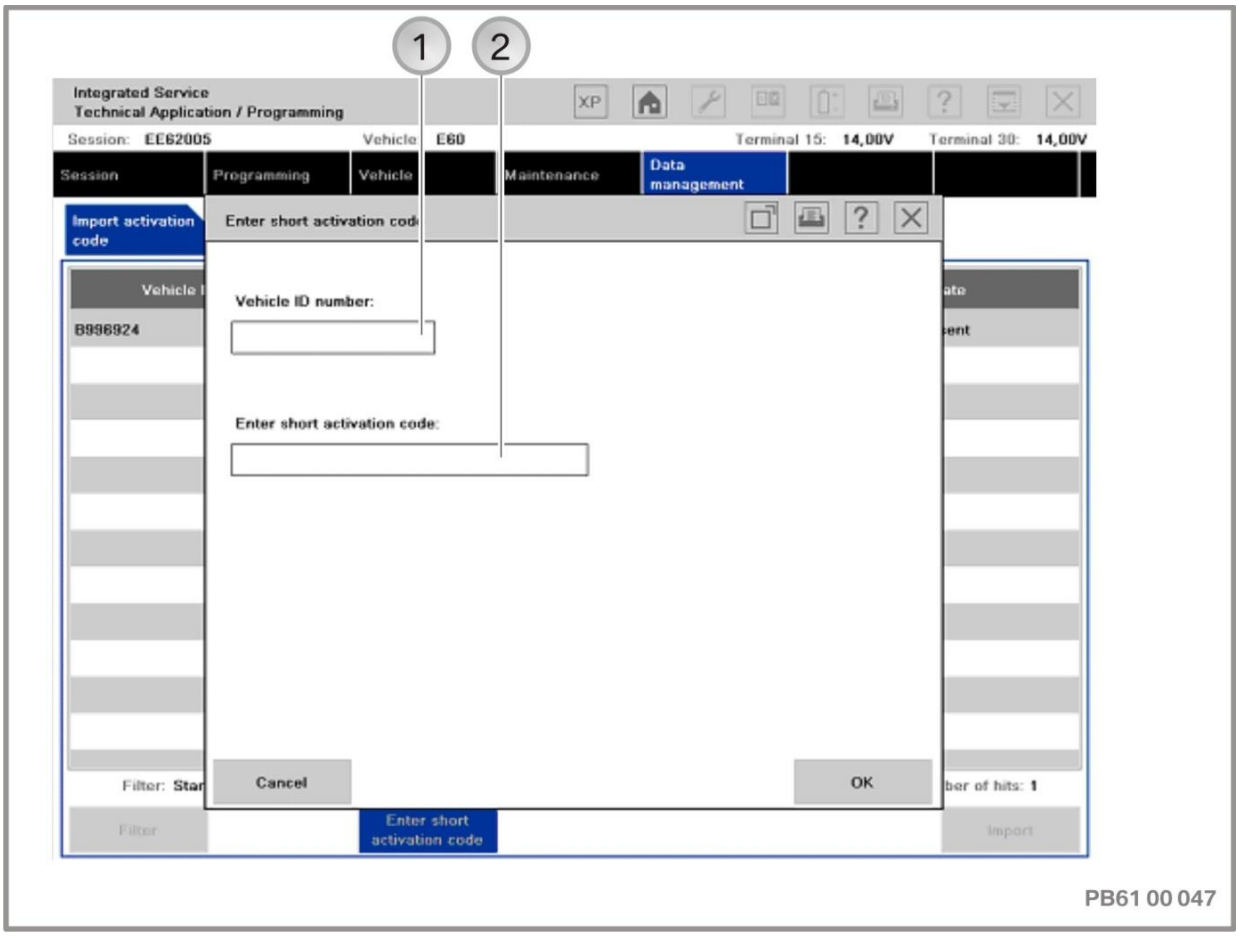
NOTE:

The enabling code can be downloaded in the ASAP portal. The enabling code is supplied on CD with new control units.
The ZIP file must be unpacked and filed on the root directory of the data carrier (e.g. F:\).
The diversity of USB storage media on the market means that it can not be guaranteed that every USB data storage medium will work with ISTA/P.

10.3. Entering the enabling code into data management (see index 7, page 45)

The short enabling code (which can be downloaded in advance from the Aftersales Assistance Portal) is used to activate the vehicle functions (e.g. road map). A pop-up appears once the "Enter enabling code" button is pressed. Entering the seven-digit vehicle identification number and 20-digit enabling code adds the activation of the vehicle function to the action plan.

- It is only possible to enter the short enabling code if the SHIFT button (for capitalisation) on the keyboard is pressed.
- The numbers "0" and "1" are not used for the enabling code to avoid confusion with the letters "O" and "I".



Index	Screen element	Index	Screen element
1	Entry of the "VIN (last seven digits of vehicle identification number)"	2	Input of 20-digit enabling code (observe capitalisation)

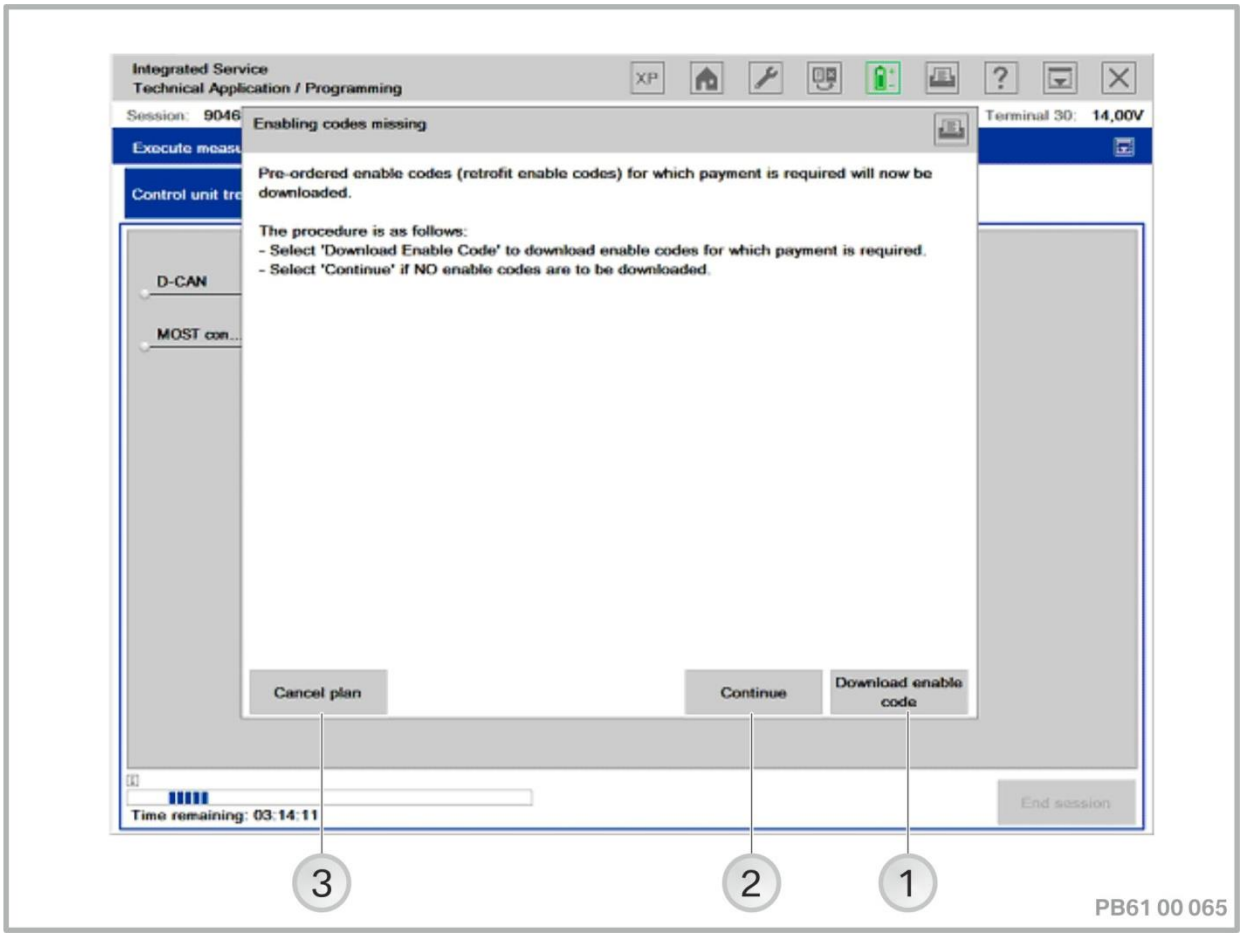
The subsequent procedure depends on the import of the enabling code.

10.4. Import via Data management

The enabling code that is needed is imported from the data management system. After the action plan has been completed, the final report will be displayed.

10.5. Import via SWT online

The "Missing enabling codes" pop-up is displayed.



Index	Screen element	Index	Screen element
1	"Download enabling code" button, The required enabling code is imported.	2	"Continue" button if an enabling will not be downloaded. See "**Import via external storage medium (e. g.: USB stick, CD)**", page 52.
3	"Plan cancellation" button Execution of the action plan is aborted		

- Acknowledge "Download enabling code“ button.

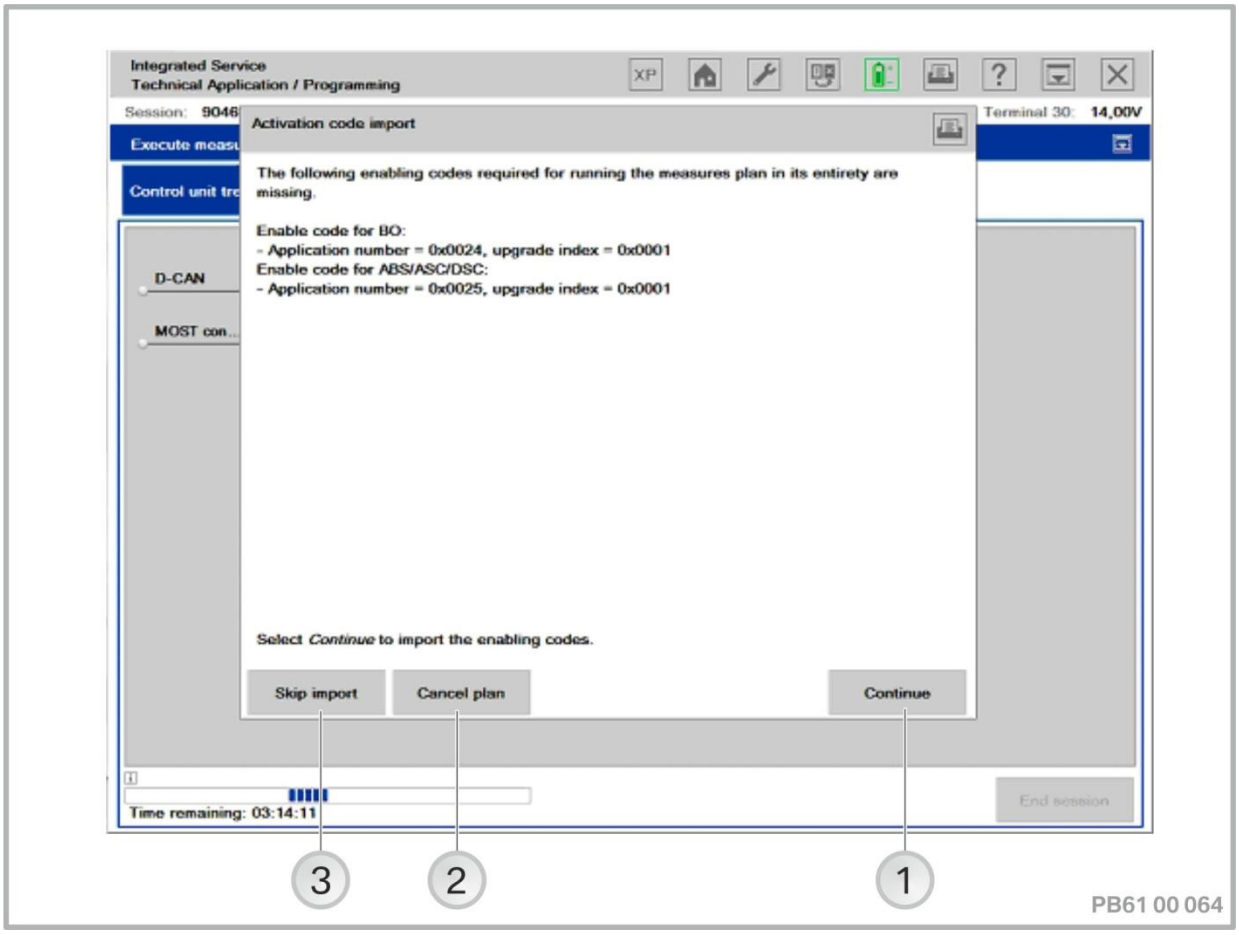
The required enabling code is imported. After the action plan has been completed, the final report will be displayed.
If a required enabling code is not available in the workshop network at the start of the measures plan, the user is requested to import / order the enabling code while the measures plan is being processed.

10.6. Import via external storage medium (e.g.: USB stick, CD)

The "Missing enabling codes" pop-up is displayed. See "**Import via SWT online**", page 51.

- Press the "Next" button to acknowledge.

The "Enabling code import" pop-up is displayed:



Index	Screen element	Index	Screen element
1	"Next" button, The enabling code is imported from the data carrier.	2	"Plan cancellation" button Execution of the action plan is aborted
3	"Skip import" button,		

	Continue action plan without enabling code		

- Press the "Next" button to acknowledge

The required enabling code is imported. After the action plan has been completed, the final report will be displayed.
The action plan can also be processed without importing the enabling code. The function is then not available. To activate the function, the enabling code can be brought in at a later time.

10.7. Enabling the navigation map (road maps) as part of a repair or retrofit

If it is necessary to update the map data, carry out the corresponding action, see "Updating and enabling navigation system map data, updating Gracenote®*, page 118".

Repair

Repair enable codes no longer need to be ordered as replacement parts.
Over ISTA/P, during a control unit replacement ("Have control units been replaced?" - "No", replacement with or without interruption of the session) the enabling codes contained in the originally installed navigation system in the AG are requested and reused for the new navigation system.
If the required enabling codes are unavailable online, the repair enabling codes can also be called up here from ASAP and imported manually over ISTA/P.

Retrofit

To retrofit the navigation system, the necessary enable codes must be ordered in addition to the control units. For information, see EPC.

10.8. Enabling the navigation map (road map) using ISTA

For new vehicles with the road map already loaded

For vehicles with Car Information Computer (CIC), CHAMP2 or HU-H (Headunit High), the road maps e.g. in Europe, North America, Japan and China (for local production) are loaded ex works. Here, the enabling of map data should be carried out as part of the pre-delivery check.

11. Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes

All conversions and retrofits that are available for the connected vehicle are shown in ISTA/P. If, through an error, the conversion or retrofit is not shown in ISTA/P, contact Technical Support via the Aftersales Assistance Portal.

NOTE:

The items displayed in ISTA/P may differ, depending on the equipment fitted and the national-market version.

Only the items specified in the Electronic Parts Catalogue (EPC) are approved for retrofitting.

Explanations of the individual conversions and retrofits offered in ISTA/P are available in the framework of fault elimination measures via Technical Support.

Depending on the vehicle circuit structure, the model series can be divided as follows in terms of conversions and retrofits:

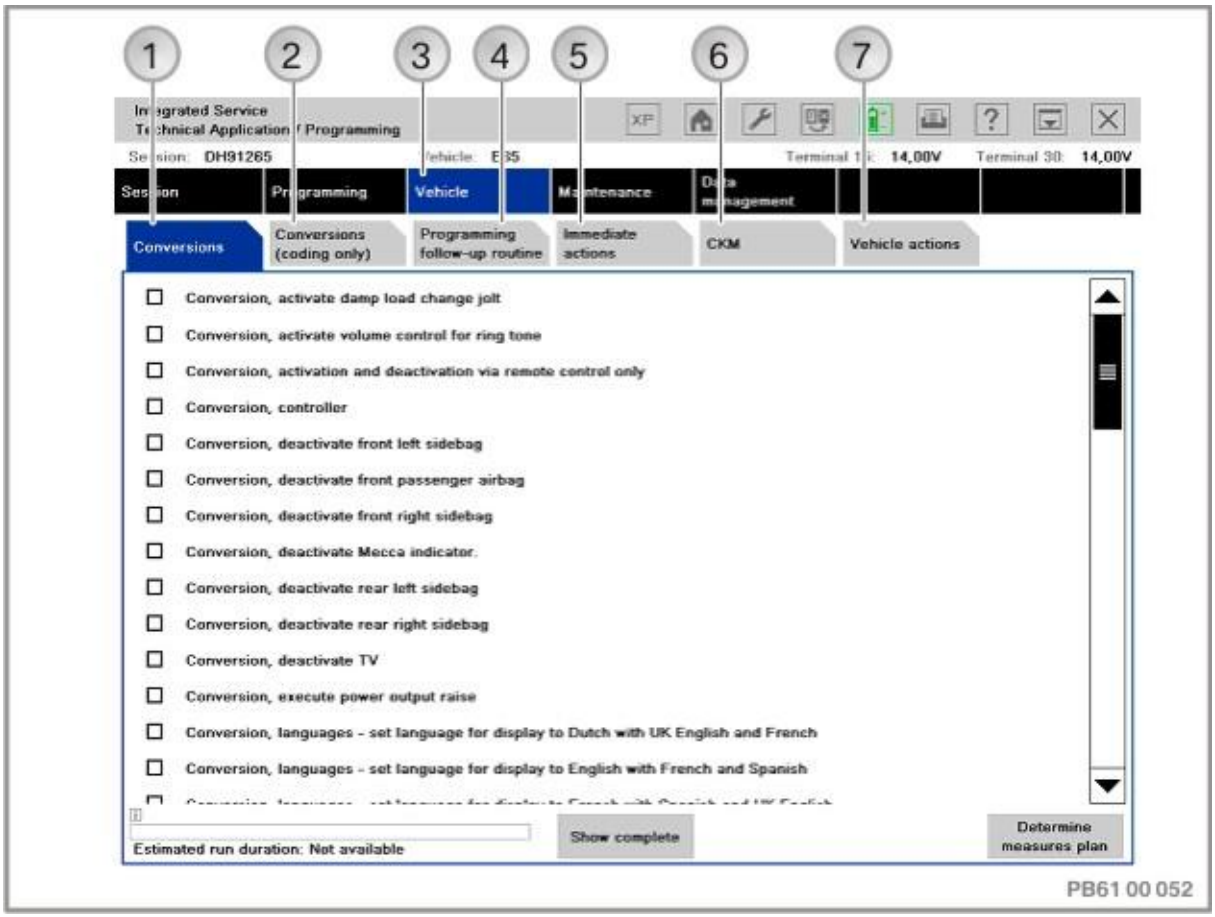
- General All vehicles of the BMW Group (not E31, E32, E34, ,)
- E-series E31, E32, E34, , (control unit coding capsule).

The programming routine for the above named series is described on the following pages.

11.1. Conversions and retrofitting, General (not E31, E32, E34)

Procedure for converting systems relevant to programming or encoding:

- Create New Session. see "'Session" menu (create new session), page 32"
- Select the "Vehicle" menu
- Select the "Conversions" tab
- Select the "Conversions (coding only)" tab (for vehicles with vehicle electrical system 2000 only).



Index	Screen element	Index	Screen element
1	"Conversions" tab available conversions and retrofits are displayed	2	"Conversions (coding only)" tab (for vehicles with vehicle electrical system 2000 only). Available conversions and retrofittings are displayed (no update of the integration level)
3	"Vehicle" menu	4	"Post programming initialisation" tab • Available service functions are displayed • Read/delete fault memory

5	"Immediate Actions" tab, e.g. • Write down system time and date • Delete transport mode • Set transport mode • Display/delete fault memory	6	"CKM" tab
7	"Vehicle actions" tab: • Update of navigation system map data (HDD update)* • Enable map data for navigation system* • Update Gracenote®* • Import vehicle order • Select complete car coding		

Under the "Conversions" tab, all conversions and retrofits available for the vehicle are displayed in alphabetical order.

- Select conversion or retrofit

For vehicles with vehicle electrical system 2000 only:
Under the "Conversions (coding only)" tab, all conversions and retrofits available for the vehicle are displayed in alphabetical order. If no conversions or retrofits are available for the vehicle, the "Conversions (coding only)" tab is not displayed in ISTA/P.

- Select conversion or retrofit

IMPORTANT!

- Observe the notes in the dialogue box (security prompt)
- Confirm with the "OK" button in the dialogue box

NOTE:

- The "Conversions (coding only)" tab is only displayed in ISTA/P for vehicles with vehicle electrical system 2000. The following series include vehicles with vehicle electrical system 2000:
  BMW E-series (E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E84, E87, E88, E89, E90, E91, E92, E93), MINI series, and Rolls-Royce series.
- For some actions (e.g. conversion (encoding only), HDD-Updates*, etc.), ISTA/P does not update the integration level if the measures for updating the integration level are cancelled. The current status of the "Integration level (actual)" of the vehicle is retained after the action has been successfully completed. Then under "Finalising tasks" in the final report, one or more actions, as well as notes, can be displayed that are necessary for a possible update of the integration level.
- When conversion or retrofitting is selected, a dialogue box opens. Once this is confirmed with the "OK" button in the dialogue box, the native measures are automatically discarded. Measures that result in an update of the integration level can no longer be added to the action plan.
- The "Restore measures" button is used to add back to the action plan, actions which lead to the integration level being updated. This button can be found in the "Control unit tree“ or "Edit control units“ tabs in the Vehicle menu. The dialogue box that follows must be confirmed with "OK".

Further procedure for IBAC enabling codes. See section "**Procedure for IBAC enabling codes, general information (not E31, E32, E34, ,)**", page 61.

11.2. Importing vehicle order into vehicle , general (not E31, E32, E34)

Three different data sources can be accessed to import the vehicle order into the vehicle:

- Online import:
  During the session, the vehicle order **can be imported as an online download in ISTA/P** independently of Technical Support.
- Import from the Data management:
  (vehicle order is prepared by Technical Support and must be imported into the Data management before the session starts)
- Import from the interchangeable data medium:
  (vehicle order is prepared by Technical Support and can be imported during the session via an interchangeable data medium in ISTA/P)

The use of the data sources is documented below.

Carrying out vehicle order import

There are two different ways to start a vehicle order import:

- The import is specified by ISTA/P if the vehicle order cannot be read out from the vehicle.
- Selection is carried out manually by the user:
  Select the "Vehicle" menu
  Select the "Vehicle actions" tab
  Select check box "Import vehicle order"

The next step for importing the vehicle order is the same for both starting methods.
Three options are offered in the following selection menu:

Online option: Select “Online“ checkbox; vehicle order is downloaded

- The dialogue boxes “Vehicle status (last known vehicle order)“ and “Version (vehicle order used for production)“ are displayed
- Select the vehicle order you want and confirm with “Continue“; vehicle order is checked
- The message “The imported vehicle order is different from the vehicle order that is stored in the vehicle“ displays added and removed vehicle order elements; confirm with “Continue“ **or**
- Confirm the message “The imported vehicle order is not different from the vehicle order that is stored in the vehicle“, with “Continue“
- The vehicle order has now been successfully imported into the Data management. Confirm with “Apply“; this will remove all measures from the action plan. Other measures cannot be added to the vehicle until the vehicle order has been imported.

Data management option(only appears if a valid vehicle order is present in the Data management): Select “Data management“ checkbox;

- Vehicle order is downloaded from the Data management and the session can be started immediately

Interchangeable data medium option: Select “Interchangeable data medium“;

- Ensure that the interchangeable data medium with the valid vehicle order is inserted into the drive; confirm with “Continue“
- Confirm message “Vehicle order was successfully imported“ with “Continue“
- The vehicle order has now been successfully imported into the Data management. Confirm with “Apply“; this will remove all measures from the action plan. Other measures cannot be added to the vehicle until the vehicle order has been imported.

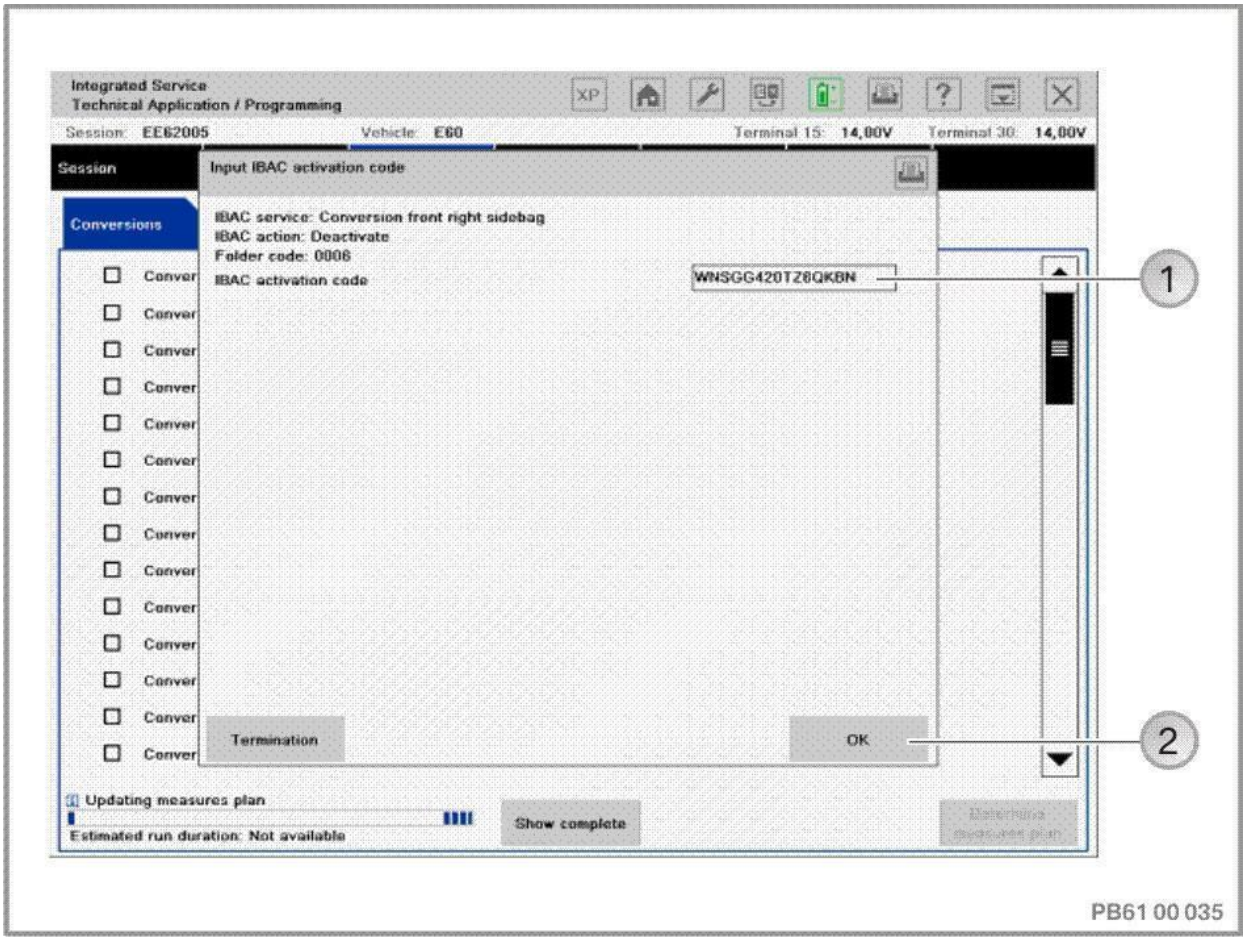
11.3. Procedure for IBAC enabling codes, in general (not E31, E32, E34)

A number of retrofits and conversions are protected by the input of IBAC enabling codes.
The IBAC enabling code can be obtained from the corresponding subsidiary (VG) or regional office. The IBAC enabling code is valid for 30 days.
The following data is needed to generate the IBAC enabling code:

- IBAC order code (or selected conversion) is displayed after selection of the conversion/retrofitting
- Seven-digit vehicle identification number
- Dealer number

NOTE:

An up-to-date list of all IBAC order codes can be obtained from the National Sales Company (NSC) or regional office. The list can be used to order the required IBAC enabling code before processing the vehicle.



Index	Screen element	Index	Screen element

1	Input box, "IBAC enabling code“	2	"OK" button

- Enter the 15-digit IBAC enabling code in the input box and confirm with "OK"
- Check the input, correct if necessary and confirm with "OK"

To select further actions (programming, encoding), switch back to the "Programming" menu.

- Press the "Determine action plan" button to acknowledge

For further procedure, refer to the vehicle-specific Vehicle programming/encoding section:

- "BMW: Programming routine for F-, G- and I-series, page 133“
- "BMW: Programming routine, E-Series from E36, page 148" (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93)
- "MINI: Programming routine, page 177“
- "Rolls-Royce: Programming routine, page 200 ".

11.4. Conversions and retrofits, E31, E32, E34, ,

Retrofit

Procedure when retrofitting systems relevant for coding and/or programming on the series E31, E32, E34:

- Create New Session. see "'Session" menu (create new session), page 32"
- "Vehicle coding" selection
- Selection of series (e.g. "E34")
- Selection "2 - Retrofit"
- System selection (e.g. "1 - air conditioning (IHKR II/III)“)
- Start automatic encoding (acknowledge with "Y")
- Note user guidance.

Conversion

Procedure for conversion of systems relevant for coding and/or programming on the series E31, E32, E34:

- Use ISTA/P to read out the vehicle data. See "'Session" menu (create new session), page 32“
- "Vehicle coding" selection
- Selection of series (e.g. "E34")
- Selection "4 - Conversion"
- System selection (e.g. "1 - Anti-theft alarm system")
- Selection of function (e.g. "2 - Optical alarm via hazard warning system")
- Start automatic encoding (acknowledge with "Y")
- Note user guidance.

NOTE:

During conversion the central encoding key is not changed, which means that in the case of recoding the relevant control unit can be encoded back to its basic state.

Procedure with IBAC enabling codes, E31, E32, E34

A number of retrofits and conversions are protected by the input of IBAC enabling codes. The IBAC enabling code can be obtained from the corresponding subsidiary (VG) or regional office. The IBAC enabling code remains valid for 30 days.
The following data is needed to generate the IBAC enabling code:

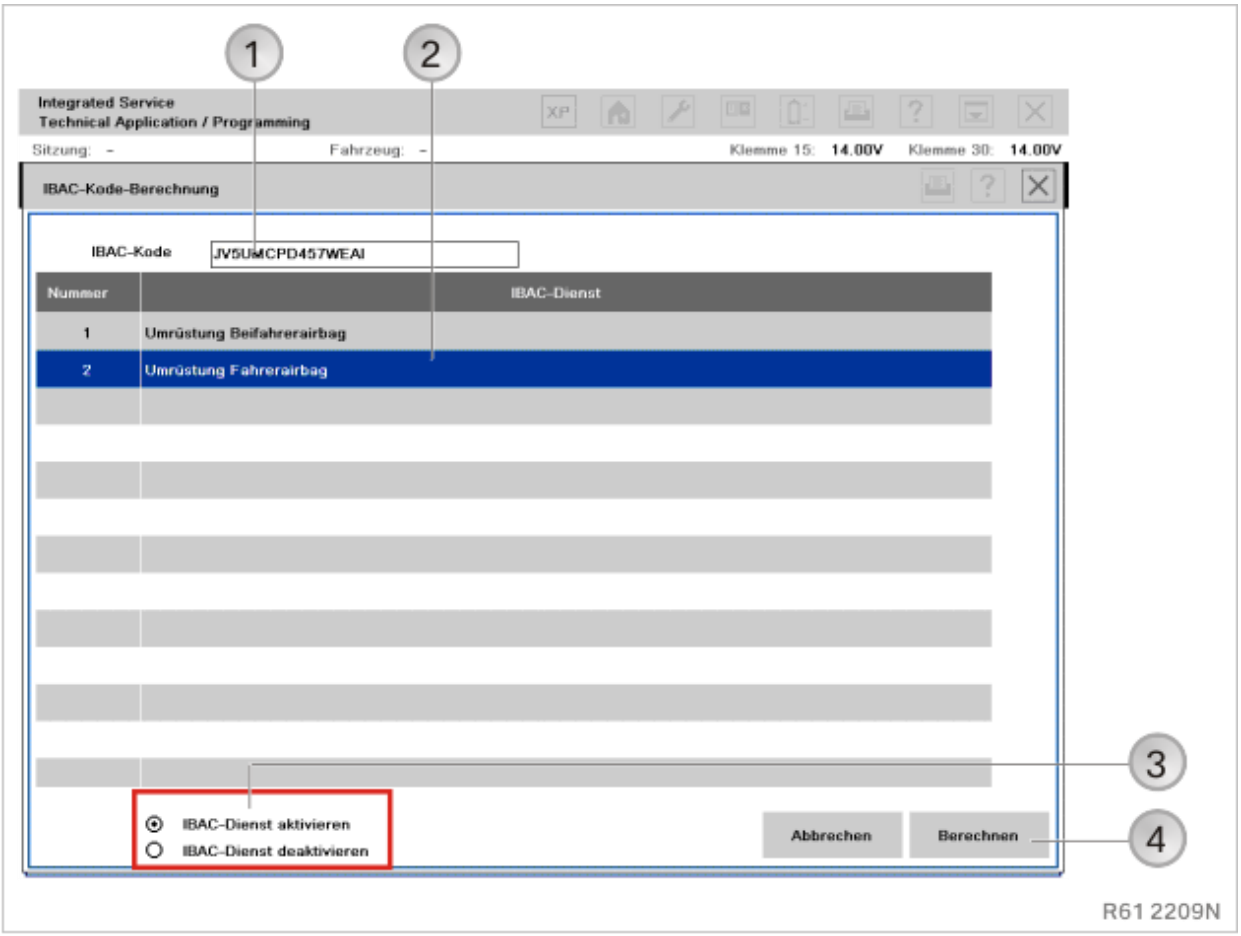
- IBAC order code (or selected conversion) is displayed after selection of the conversion/retrofit
- Seven-digit vehicle identification number
- Dealer number

NOTE:

An up-to-date list of all IBAC order codes can be obtained from the subsidiary or regional office. The list can be used to order the required IBAC enabling code before processing the vehicle.

Calculating the five-digit IBAC enabling code, E31, E32, E34

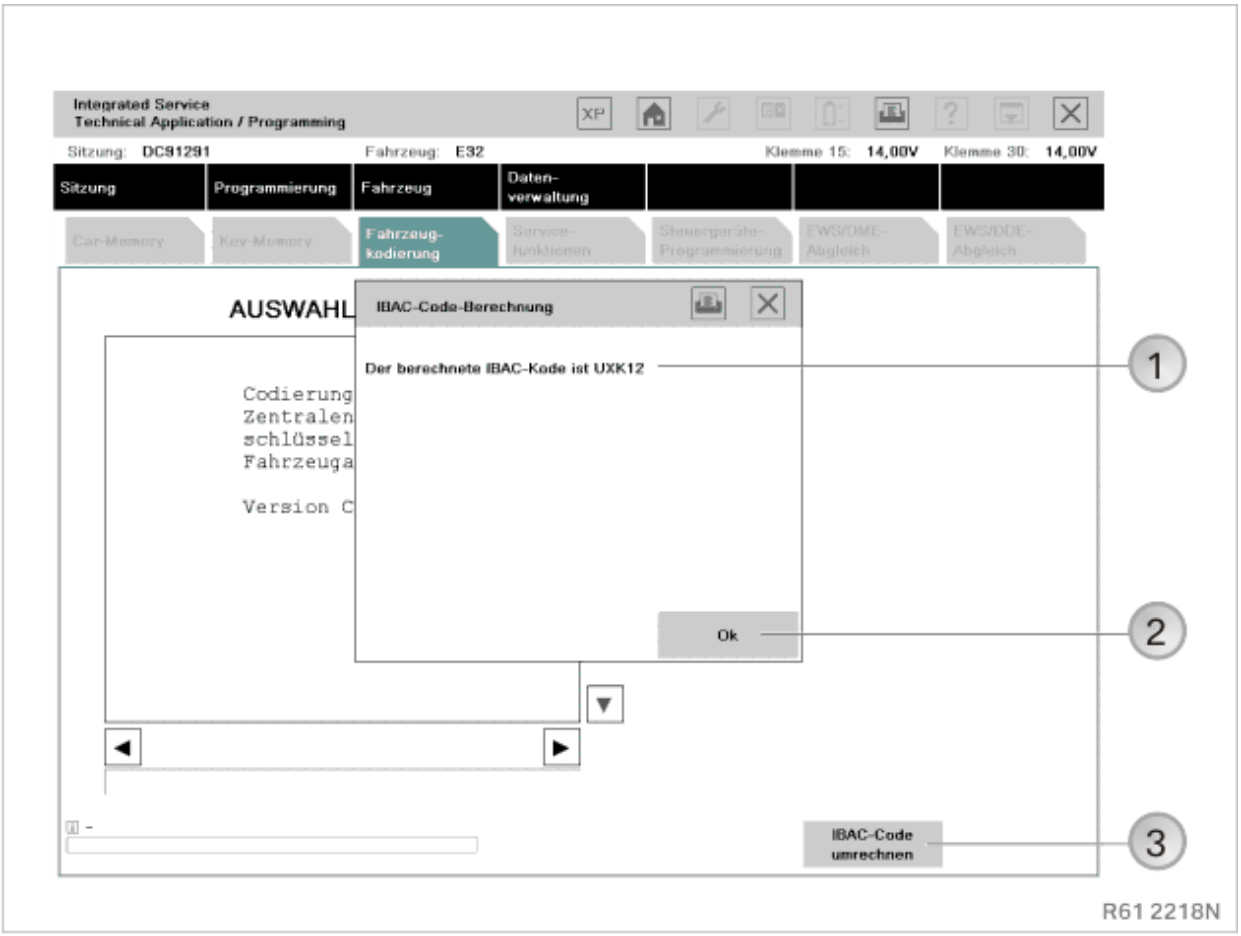
On vehicles of the series that are treated using the control unit coding capsule (E31, E32, E34), the 15-digit IBAC enabling code must be converted into a five-digit IBAC enabling code.



Index	Screen element	Index	Screen element
1	Input box for 15-character IBAC enabling code	2	Selected IBAC online service
3	Activate/deactivate IBAC service	4	"Calculate" button, The five-digit IBAC enabling code is calculated

Proceed as follows to calculate the five-digit IBAC enabling code:

- To convert the IBAC enabling code on any screen in the control unit coding capsule, press the "Convert IBAC code" button to acknowledge
- Select activate/deactivate IBAC service
- Enter the 15-character IBAC enabling code and press the "Calculate" button to acknowledge.



Index	Screen element	Index	Screen element
1	The calculated five-digit IBAC enabling code is displayed	2	"OK" button
3	"Convert IBAC code" button		

- Note down the five-digit IBAC enabling code received in response and enter it manually when requested to do so by the control unit encoding capsule.

NOTE:

The five-digit IBAC enabling code is not saved.

For further procedure, refer to the vehicle-specific Vehicle programming/encoding section:

- "BMW: Programming routine, BMW E-Series E31, E32, E34, page 163"

12. Car & Key Memory (CKM)

By customer request, various settings on the vehicle can be changed by means of encoding on certain series (e.g. E46, R53, RR1, ,). There are settings (Key) that are assigned to a certain spare key (maximum of four spare keys), e.g. heating / climate control / ventilation; other settings (Car) apply to the entire vehicle, e.g. anti-theft protection.
The Car & Key Memory settings can be selected following determination of the native action plan in the "Vehicle" menu under the "CKM" tab. The "CKM" tab is only displayed for vehicles with Car & Key Memory. All the CKM settings available for the connected vehicle are displayed.

NOTE:

Due to different legal stipulations, there may be national differences in possible CKM settings. The car and/or key memory can be set depending on the series and options. Factory settings may also vary from country to country.

NOTE:

When replacing control units, it may happen that individual data in the CKM settings are not automatically restored. Before exchanging a control unit, the CKM values of the vehicle must be printed out so that they can be restored after the control unit exchange.

BMW E70, E71, E72, E81, E82, E84, E87, E88, E89, E90, E91, E92, E93, F-, G-, and I-series

MINI R55, R56, R57, R58, R59, R60, R61

Rolls-Royce RR4 and Series 2 (RR1, RR2 und RR3)

All functions of the Car & Key Memory are set directly in the vehicle in these series (see Operating Instructions under "Personal Profile": Individual settings for a maximum of three remote control units via the display in the instrument cluster or via the Central Information Display).

BMW (E38, E39 and E46 from 09/1998 onward), E52, E53, E60, E61, E63, E64, E65, E66,E83, E85, E86

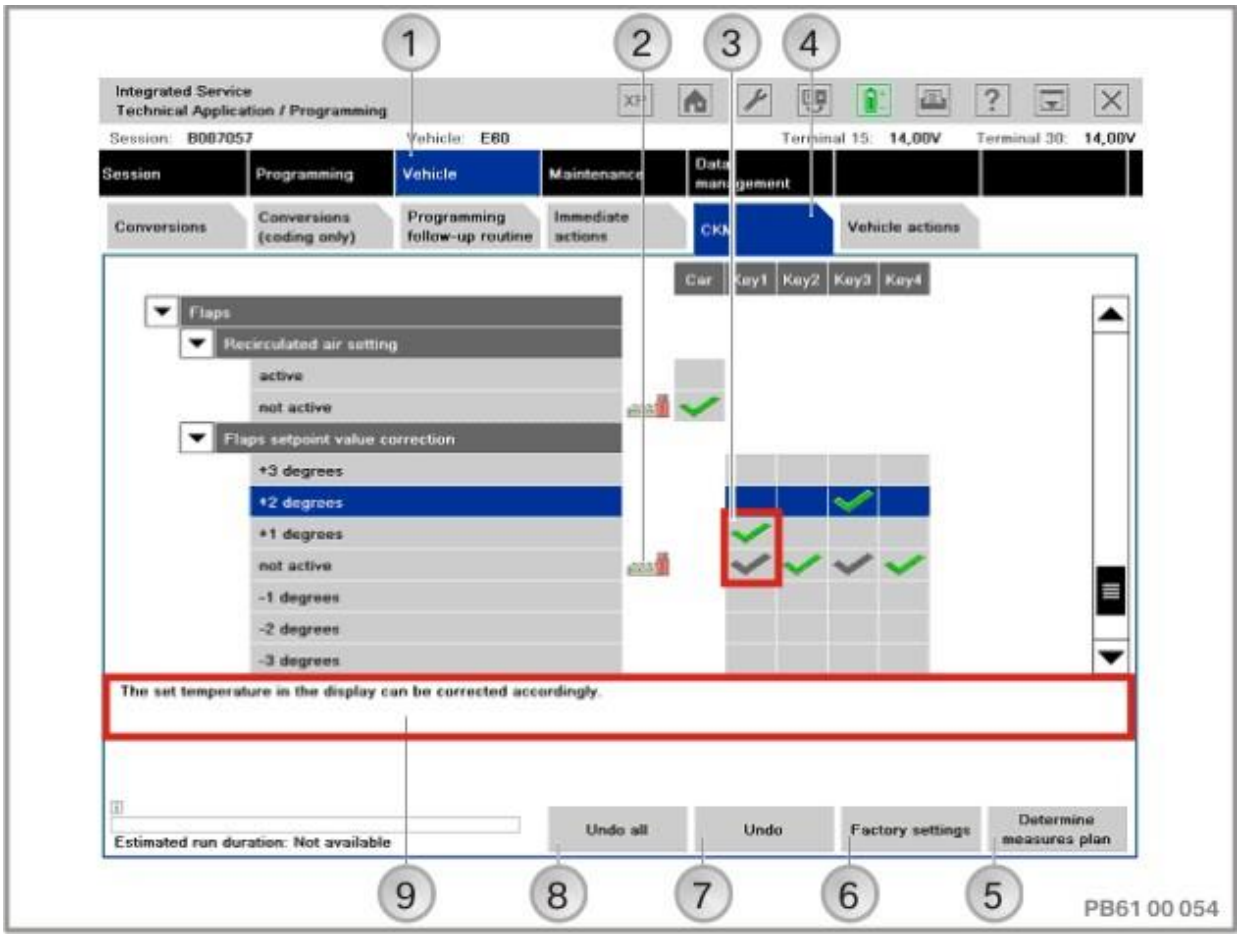
MINI R50, R52, R53

Rolls-RoyceRR1, RR2, RR3

The procedure for programming the Car & Key Memory is described below. Two or more parameter keywords (e.g. active, inactive) are assigned to a function or a function keyword. The current setting is indicated by a green tick and can be changed manually. Key functions can be set separately for a maximum of four keys. The factory setting is indicated by a corresponding symbol beside the parameter keyword.
The CKM functions are structured in a maximum of three hierarchy levels. Main functional group (e.g. central locking system), functional group (e.g. unlocking rear window, luggage compartment lid / bonnet) and an optional functional subgroup (e.g. luggage compartment lid / bonnet after ignition on).

12.1. Change car and key memory

- Create New Session. see ""Session" menu (create new session), page 32"
- Select the "Vehicle" menu
- Select the "CKM" tab



Index	Screen element	Index	Screen element
1	"Vehicle" menu	2	"Factory setting" symbol, Shows the factory setting of the function
3	Tick marks: the green tick shows the selected setting of the function, and the grey tick shows the active setting of the function	4	"CKM" tab
5	"Determine action plan" button	6	"Factory settings" button, The factory settings for the vehicle and the keys are restored
7	"Undo" button, the setting last changed is cancelled	8	"Undo all" button, The changed settings are reversed

9	When selecting the parameter keyword, the note on the function is displayed		

NOTE:

The set CKM values can be printed out. Values that have been changed but not yet stored in the vehicle may be lost by printing CKM settings. It is advisable to print out the CKM settings at the start of programming and if necessary immediately after completing CKM reprogramming.

- Select the desired change using "active", "inactive" or through predefined values (e.g. if double-unlocked, always).

To select further actions (programming, encoding), switch back to the "Programming" menu.

NOTE:

The CKM values can be changed without updating the integration level. To do this, confirm the "Remove measures" button in the "Programming" menu in the "Control unit tree" tab. All measures determined based on the target context are removed. Control unit actions that are relevant for updating the integration level cannot be manually selected.

NOTE:

The selected settings for Car & Key Memory are retained even if the control units are reprogrammed or re-encoded.
If the CKM backup or restore was not successfully performed, this will be seen in the final report.

For further procedure, see the vehicle-specific chapter Vehicle programming/encoding:

- "BMW: Programming routine for F-, G- and I-series, page 133"
- "BMW: Programming routine, E-Series from E36, page 148" (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93)
- "MINI: Programming routine, page 177“
- "Rolls-Royce: Programming routine, page 200 ".

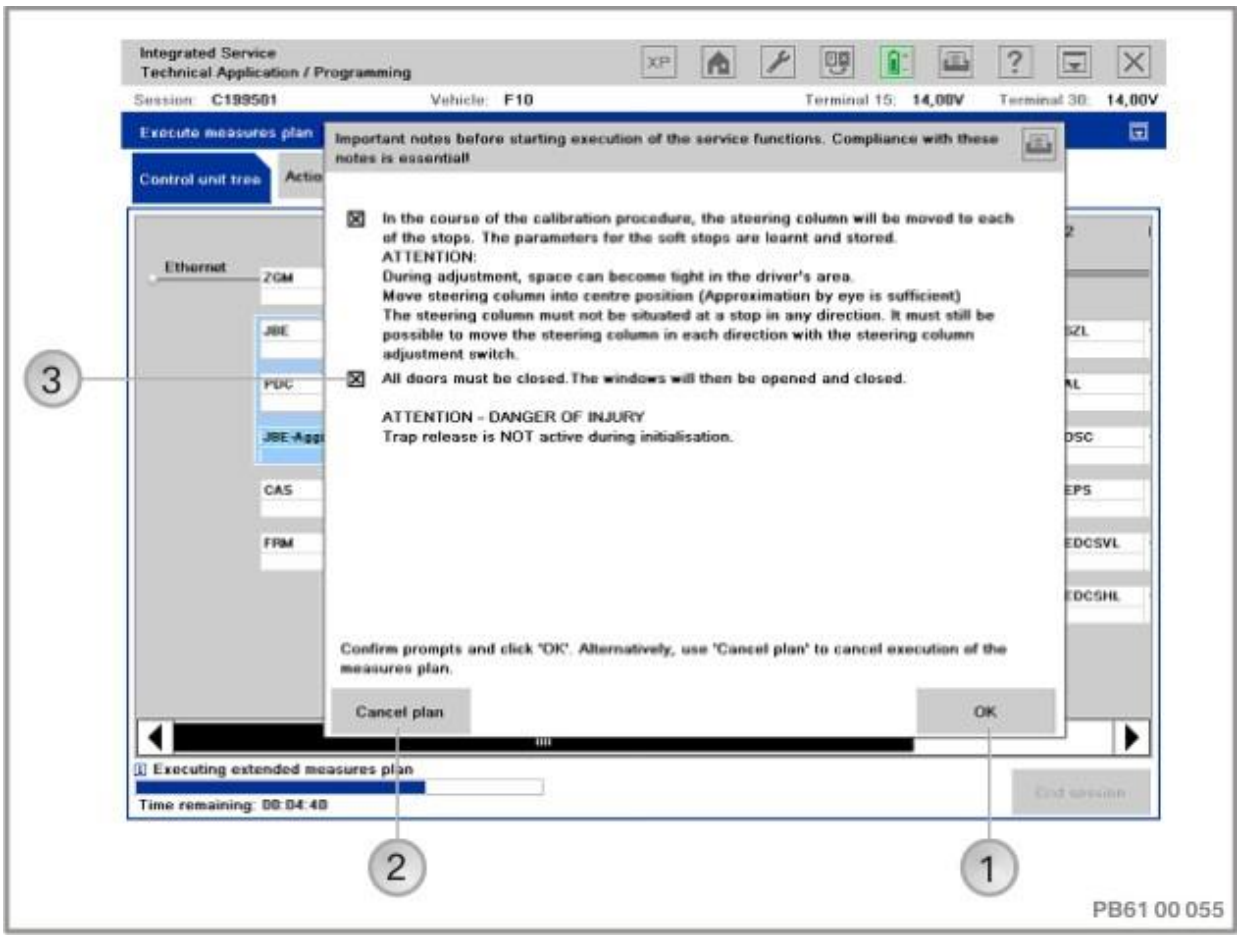
13. Post programming initialisation (service function, initialisation, adjustment)

A further improvement to this process is the integration in ISTA/P of any post programming initialisation required (previously the service function, initialisation, adjustment to be performed in ISTA). At this time, all post programming initialisation items that have not yet been integrated still need to be carried out in ISTA. Progressively, these functions will be integrated into ISTA/P if possible.
Appropriate post programming initialisation items will be automatically included in the action plan and carried out during the processing of the action plan, depending on the actions that have been selected. In this case, there is no need for a final note referring to these post programming initialisation items, previously carried out manually in the ISTA workshop system.
The post programming initialisations are linked directly to the relevant control unit actions (programming, encoding, replacement). They are added automatically in accordance with the planned measures.
This is done as much as possible without user interaction (with notification of security-relevant or interactive post programming initialisation).

NOTE:

Post programming initialisations that cannot be conducted automatically (with safety information or manual interaction) can be manually deselected before execution after

completing the programming and encoding, if the required prerequisites according to the displayed notes cannot be fulfilled.



Index	Screen element	Index	Screen element
1	"OK" button	2	"Planned cancellation" button
3	"Notes" checkbox		

To continue the action plan, proceed as follows:

- Observe the notes, activate checkbox if necessary
- Press the "OK" button to acknowledge

NOTE:

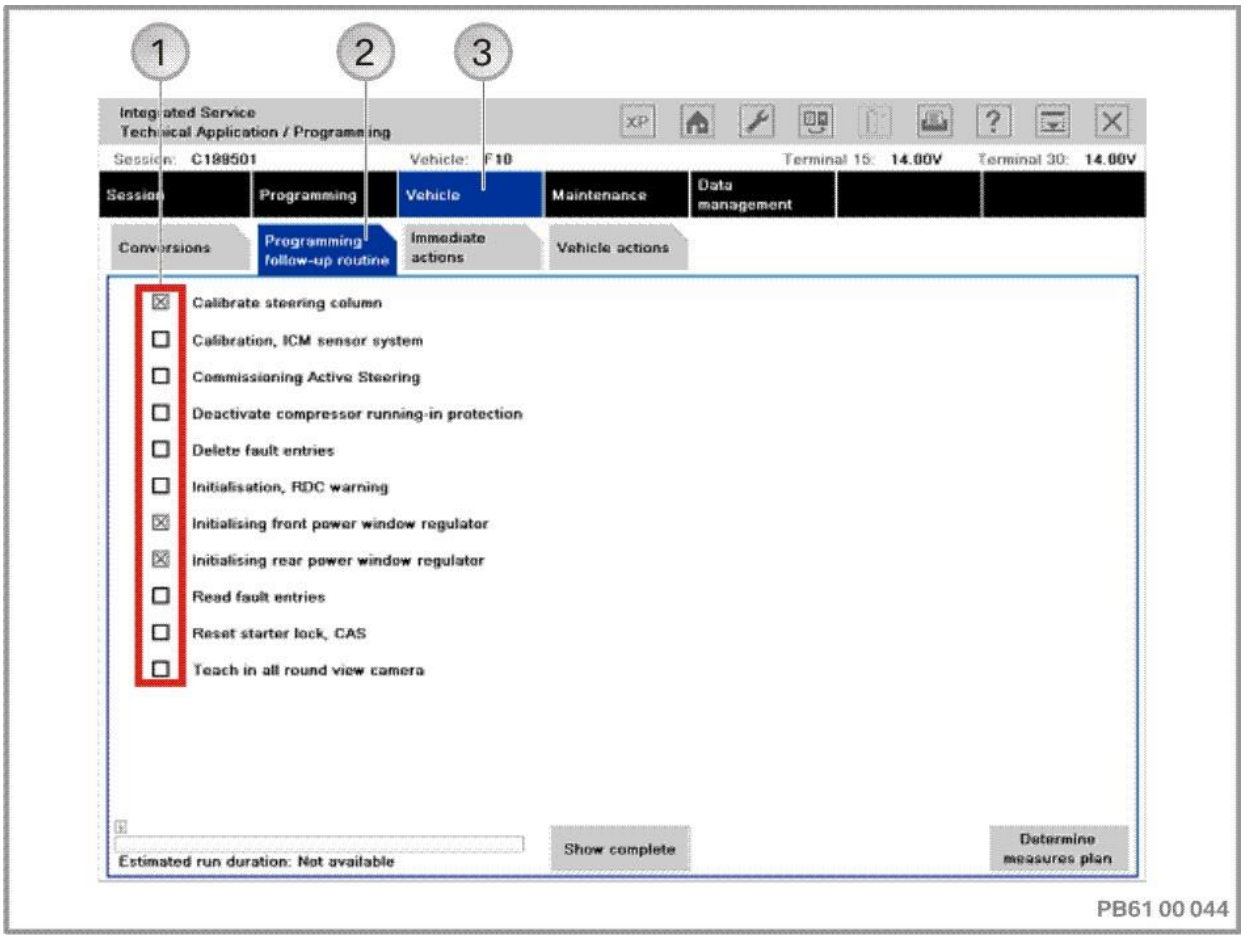
Post programming initialisations that are not selected (e.g. due to preparations that have not been made) are **not** carried out and displayed in the final report as measures still to be carried out.
The concluding notes in the ISTA/P final report are decisive for executing post programming initialisation items in ISTA. Post programming initialisation items/service functions successfully executed in ISTA/P are **not** to be executed again in ISTA and **cannot** be billed separately.
If a post programming initialisation was **not** executed successfully, it can also be manually added to a new action plan (as an alternative to execution in ISTA).

Manual selection procedure for post programming initialisation:

Only required if not already automatically added to the action plan, or erroneously executed.

- Create New Session. see "'Session" menu (create new session), page 32"
- Select the "Vehicle" menu
- Select the 'Post-programming item' tab

The available post programming initialisation are then displayed:



Index	Screen element	Index	Screen element
1	"Service functions" check box	2	"Post programming initialisation" tab
3	"Vehicle" menu		

- Activate the corresponding checkboxes

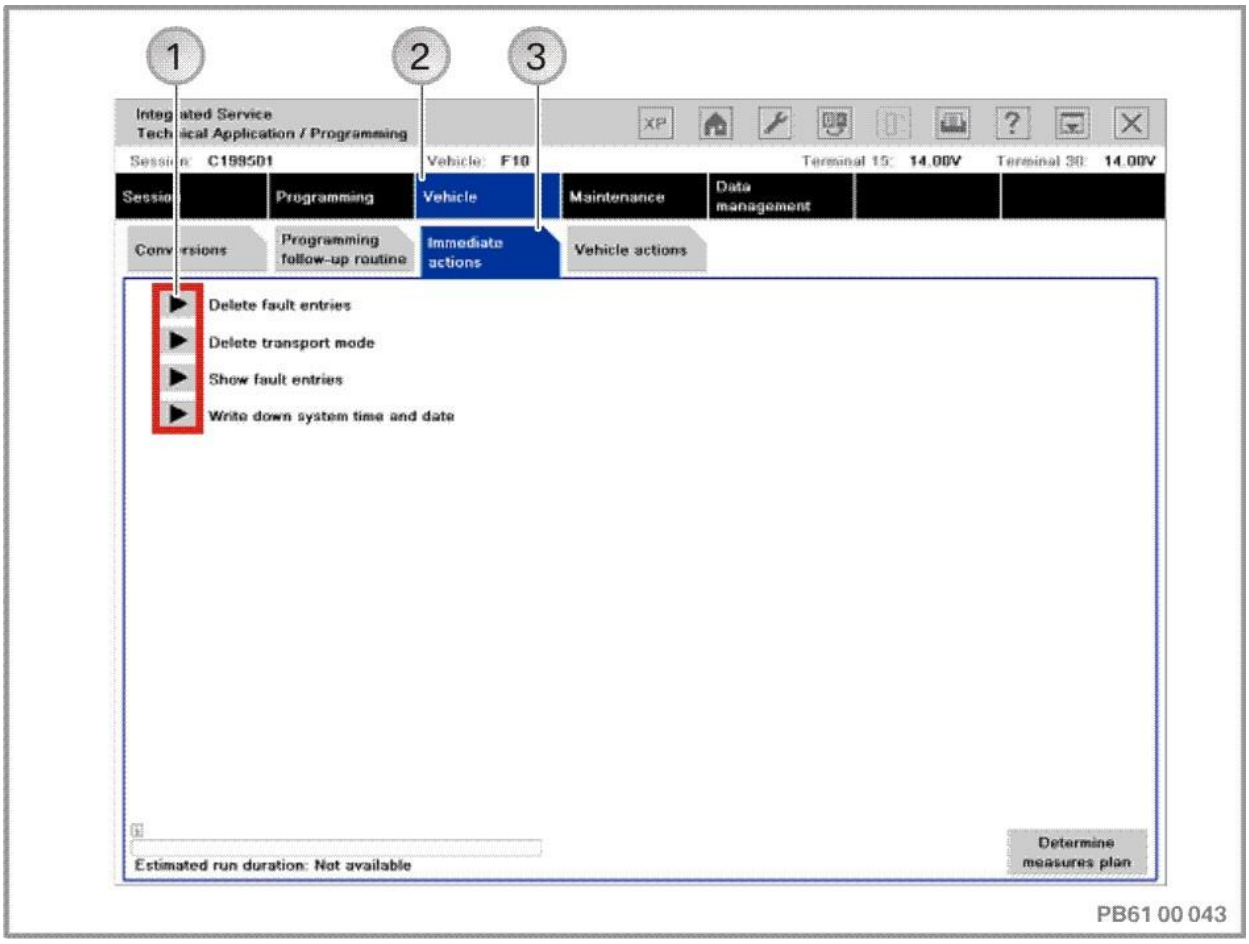
The post-programming items/service functions are carried out while the action plan is being implemented. A corresponding note (where necessary, a warning) is displayed before the post-programming items/service functions start getting implemented.
To select further actions (programming, encoding), switch back to the "Programming" menu.

For further procedure, refer to the vehicle-specific Vehicle programming/encoding section:

- "BMW: Programming routine for F-, G- and I-series, page 133“
- "BMW: Programming routine, E-Series from E36, page 148" (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93)
- "MINI: Programming routine, page 177“
- "Rolls-Royce: Programming routine, page 200 ".

14. Immediate actions (executing service functions without action plan / or final report)

A further improvement to this process is the integration in ISTA/P of any immediate actions/service functions required (service functions that were previously performed in ISTA).

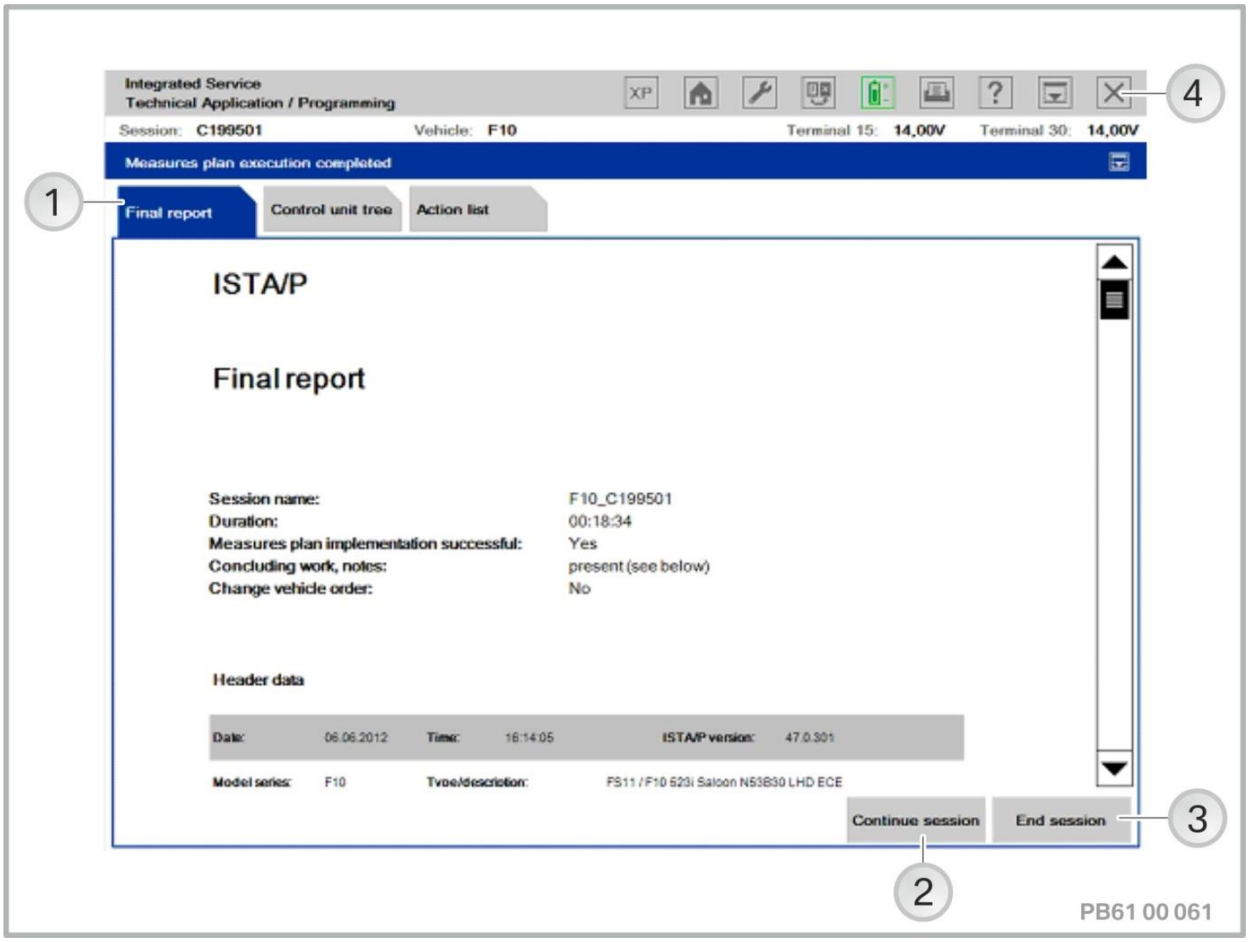


Index	Screen element	Index	Screen element
1	"Execute Immediate Actions" buttons	2	"Vehicle" menu
3	"Immediate Actions" tab		

The relevant immediate actions are executed immediately after pressing the "Execute Immediate Actions" button. In this case, a dialogue box is displayed; follow notes (e.g. switch ignition on/off while deleting fault code entries). The immediate actions carried out are **not** added to the action plan and are **not** shown in the final report.

15. End session, close ISTA/P

After the action plan has been executed, the final report will be displayed:



Index	Screen element	Index	Screen element
1	"Final report" tab	2	"Continue session" button
3	"End session" button (Session will be ended)	4	"Close application program" symbol ("Close session/application?")

15.1. Continue session (see index 2, page 77)

After an action plan (final report is displayed) has been executed, fast re-entry into the same session is possible with the "Continue session" button. A new session for the vehicle does not have to be created. Re-entry into the same session can be necessary for further actions (e.g. add complete car coding). The re-entry into the session depends on the type of actions carried out in the action plan.

Re-entry into the session:

User action: Press the "Continue session" button.

Case 1:

After a vehicle order has been imported or a control unit repaired, the session is re-entered on determining the series. Determinations for vehicle access, vehicle details, actual context and nominal context are carried out again by ISTA/P.

Case 2:

In other cases, the determination of vehicle details, actual context and nominal context is not carried out again.
The following measures can be carried out following re-entry into the session:

- Manual addition of actions to the measures plan,
- Execution of immediate measures
- Determination of the measures plan

15.2. Close application program (see index 4, page 77)

When the "Close application program" is selected, a dialogue box opens with the following function options:

	"Close session/application?" **"Warning"**		
Preselection by button	**"End session"**		
User action by button	"Cancel"	"Session overview"	"Close application"
Result	Dialogue box closed without action.	Session will be ended. Change to session overview.	Session will be ended. Application software or ISTA/P client is closed.
Preselection by button	**"Minimise session"**		
User action by button	"Cancel"	"Session overview"	"Close application"
Result	Dialogue box closed without action.	The session will **not** be ended. Change to session overview.	The session will **not** be ended. Application software or ISTA/P client is closed. (Note: Session can be continued after calling up of the ISTA/P client.)

15.3. Final report (see index 1, page 77)

The vehicle information and executed actions from the action plan are shown in the final report.

Structure of the final report:

The structure of the final report is dependent on the series (e.g. F-Series) as well as the executed actions from the action plan.

General information:	
Session name, time length, action plan realisation successful, concluding tasks/notes and change for vehicle order.	**ATTENTION!** "Action plan realisation successful" should be confirmed with "yes", if necessary rectify cause.

Header data	
Date, time, ISTA/P version, series, type/description, odometer, vehicle identification number, integration level (works), integration level (old), Integration level (new), time criteria, paint code, upholstery code, E-words, K-words and optional equipment numbers.	NOTE: • Integration level (works), displays the integration level with which the vehicle has been produced • Integration level (old) displays the integration level before updating, • Integration level (new) displays the integration level after updating, • E-words identify retrofitting and conversions ex works • K-words identify retrofitting and conversions by the dealer organisation • Optional equipment numbers identify the optional equipment
Data in the footer	
Date, time, page number, vehicle identification number and ISTA/P version.	NOTE: • VIN (last seven digits of vehicle identification number)

Programming/encoding according to bus systems (e.g. Ethernet)	
Control unit, action, result/fault code, status, type, hardware index, Part number prog. control unit old, Part number prog. control unit new, and SGBM-ID (only for F-, I- G-series).	NOTE: • Under "Type" all executed actions are marked with "Sys" that were determined by ISTA/P in the action plan. Manually added actions are displayed as "Man", • Part number prog. control unit old identifies the part number of the programmed control unit before vehicle processing, • Part number prog. control unit new identifies the part number of the programmed control unit after vehicle processing, • SGBM identifies the control unit description model.
Actions, post-programming initialisations	
Action, note, result, status, type.	NOTE: Under "Type" all executed actions are marked with "Sys" that were determined by ISTA/P in the action plan. Manually added actions are displayed as "Man".

Data recovery	
Control unit, action, result, status and type.	**NOTE:** Under "Type" all executed actions are marked with "Sys" that were determined by ISTA/P in the action plan. Manually added actions are displayed as "Man".
Enabling code	
Listing of the enabling codes prior to the executed actions	Application number, upgrade and status
Listing of the enabling codes following the executed actions	Application number, upgrade and status
Additional actions	
Control unit, action, result/error code, status.	
Concluding work, notes	
Number and task/note.	**NOTE:** Under "Activity/Note" the activities still required and notes are shown. **ATTENTION!** Before return to the customer, all tasks under "Concluding tasks" must have been worked through and notes followed.
Backup pages (only for F-, G-, I-series)	
Control unit, status before the action plan and status after the action plan.	

NOTE:

Under "Status" symbols are shown depending on the result or fault code,

- Green check mark indicates: Action successful
- Warning symbol indicates: Warning
- Red cross indicates: Action failed
- Red cross with bent arrow indicates: missing prerequisites for the action

NOTE:

Continue session:

For a continued session the addendum "session continuation" is added to the existing final report. The vehicle information and executed actions from the action plan are shown in the addendum "session continuation".

16. Manual entry after programming abort on vehicles with vehicle electrical system 2000

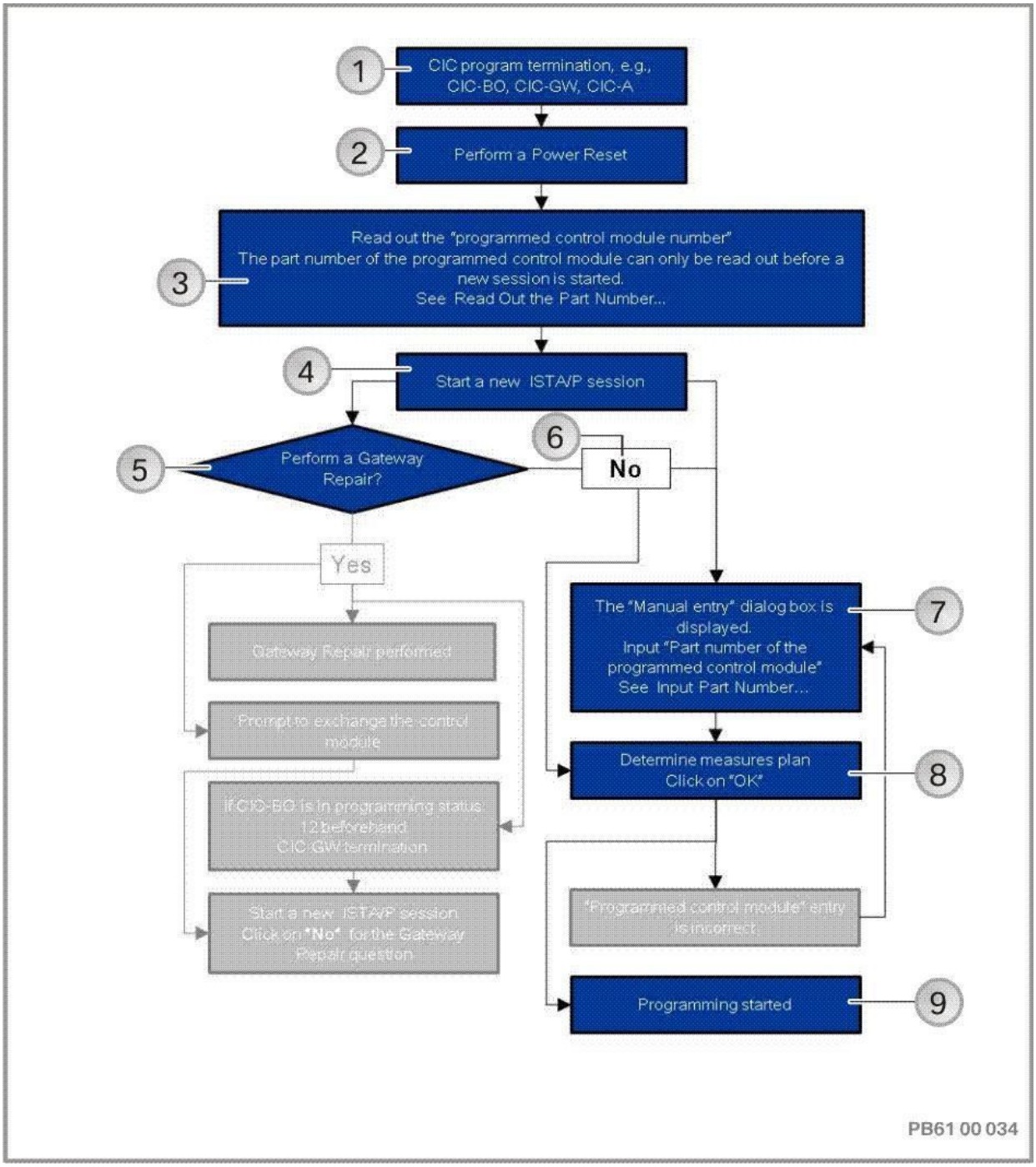
After a programming abort, it may no longer be possible to read out the part number of the programmed control unit. In order to restore the functionality of the control unit, the part number of the control unit that is being programmed must be entered manually.
The following flow chart shows (using CIC as an example) the user the direct way to successful carry out manual entry.

NOTE:

Replacing control units will not rectify the problem.
In order to program successfully after a program abort, a power reset must be performed.

16.1. Manual entry with power reset

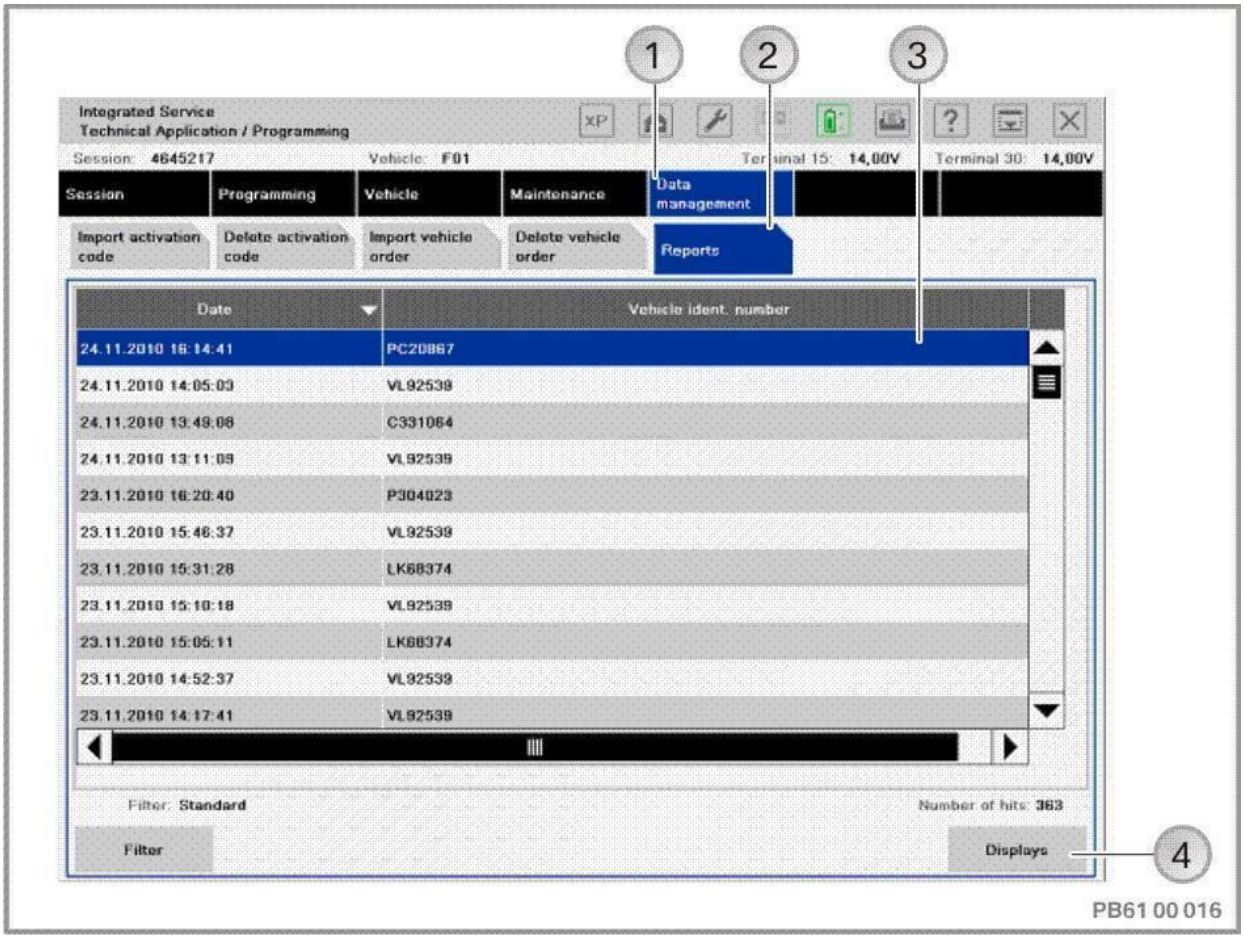
In order to program successfully (using CIC as an example), perform the steps with the blue background in the flow chart.



Index	Screen element
1	Programming abort CIC e.g. CIC-BO, CIC-GW, CIC-A.
2	Perform a power reset.
3	Read out "programmed control unit number". The part number of the programmed control unit can only be read out before the new session is started. See "**Read out part number of control unit that is to be programmed**,page 88".
4	Start new ISTA/P session.
5	Perform a gateway repair?
6	No.
7	"Manual entry" dialogue box is displayed. Enter the "Part number of programmed control unit". See "**Enter part number of control unit that is to be programmed**,page 90".
8	Determine the action plan. Confirm with "OK".
9	Programming is being carried out.

16.2. Read out part number of control unit that is being programmed

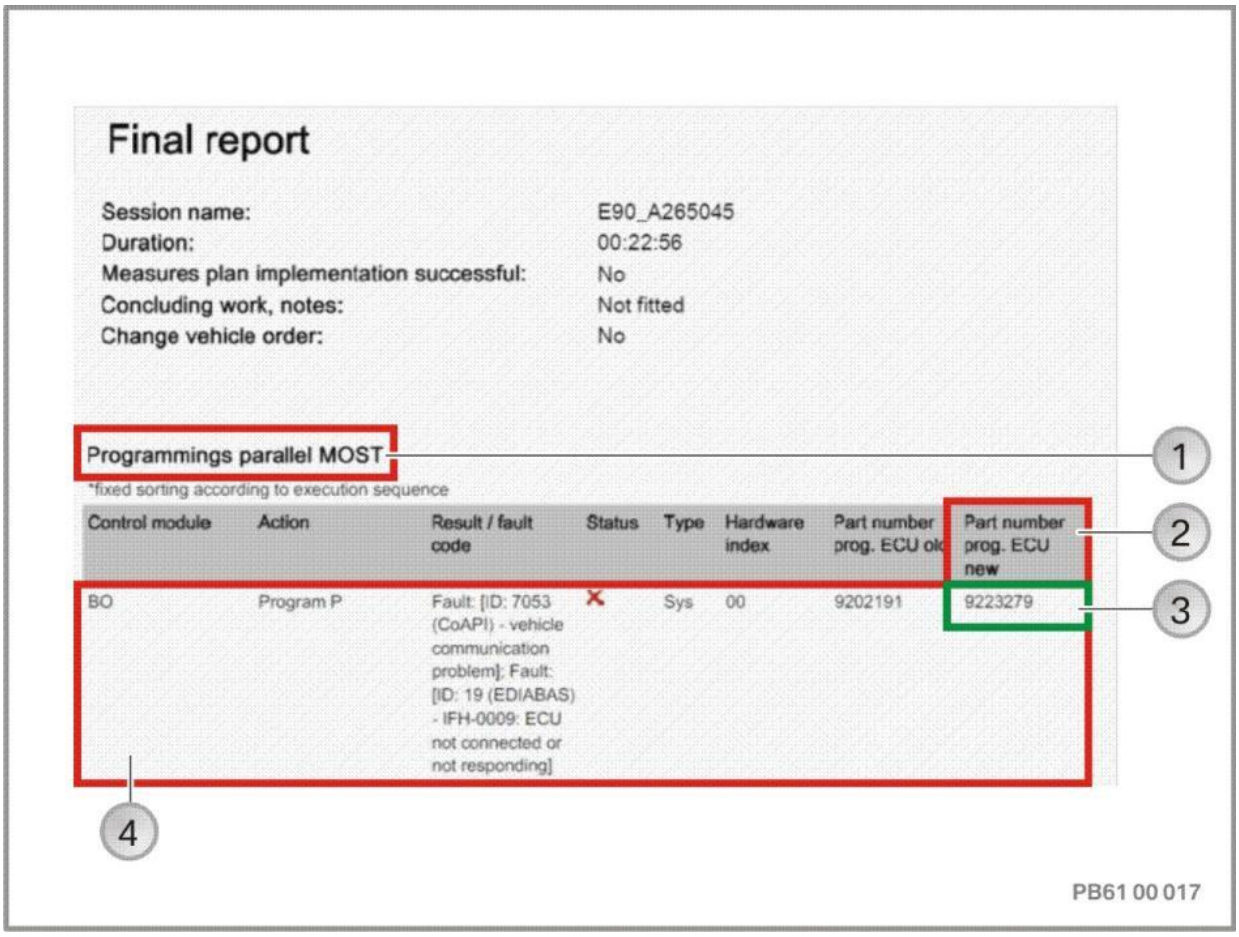
The part number of the programmed control unit can only be read out, before a new session is started. To read out the part number of the programmed control unit, proceed as follows (on example of CIC-BO):



Index	Screen element	Index	Screen element
1	"Data management" menu	2	"Reports" tab
3	Final report (vehicle to be dealt with)	4	"Displays" button

- Select the "Data management" menu
- Select "Reports" tab
- Select final report of last session of vehicle
- Confirm the "Displays" button

Final report of last session is displayed:

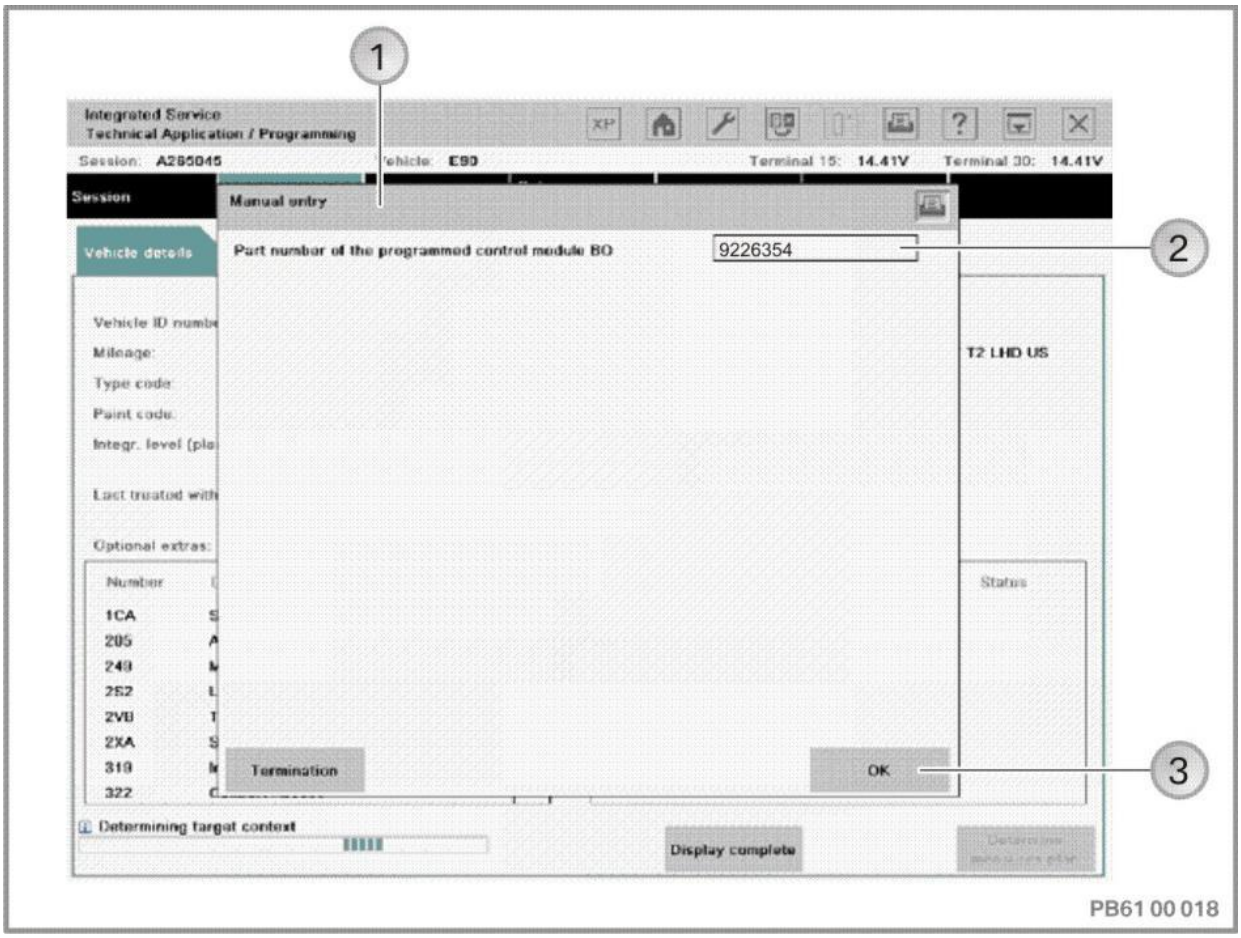


Index	Designation	Index	Designation
1	"MOST programming" section header	2	"Part number prog. control unit new" column
3	Part number of programmed control unit CIC-BO	4	CIC-BO control unit line (The CIC-BO is referred to as "BO" in the final report)

- Scroll through final report up to "Programming" or "MOST programming" work overview
- Select control unit to be programmed in line
- Read out and make note of part number of programmed control unit in "Part number of programmed new control unit" column. In this case 9223279 for CIC-BO.

16.3. Enter part number of control unit that is being programmed

The request for manual entry is displayed during target context determination.



Index	Designation	Index	Designation
1	"Manual entry" dialogue box	2	"Part number of programmed control unit" input box (example of CIC-BO)
3	"OK" button		

- Enter previously noted "Part number of the programmed control unit" and confirm with the "OK" button.
- For further procedure, see the vehicle-specific chapter Vehicle programming/encoding:
- "BMW: Programming routine for F-, G- and I-series, page 133"
- "BMW: Programming routine, E-Series from E36, page 148" (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93)
- "MINI: Programming routine, page 177“
- "Rolls-Royce: Programming routine, page 200"" ()

17. Manual programming for instrumentation bus vehicles

BMWE38, E39, E46, E52, E53, E83, E85, E86

MINI R50, R52, R53

Programming using manual input is necessary for technical campaigns and for incorrectly programmed control units. In this process, the basic control unit number and the programmed part number of the control unit are entered manually.

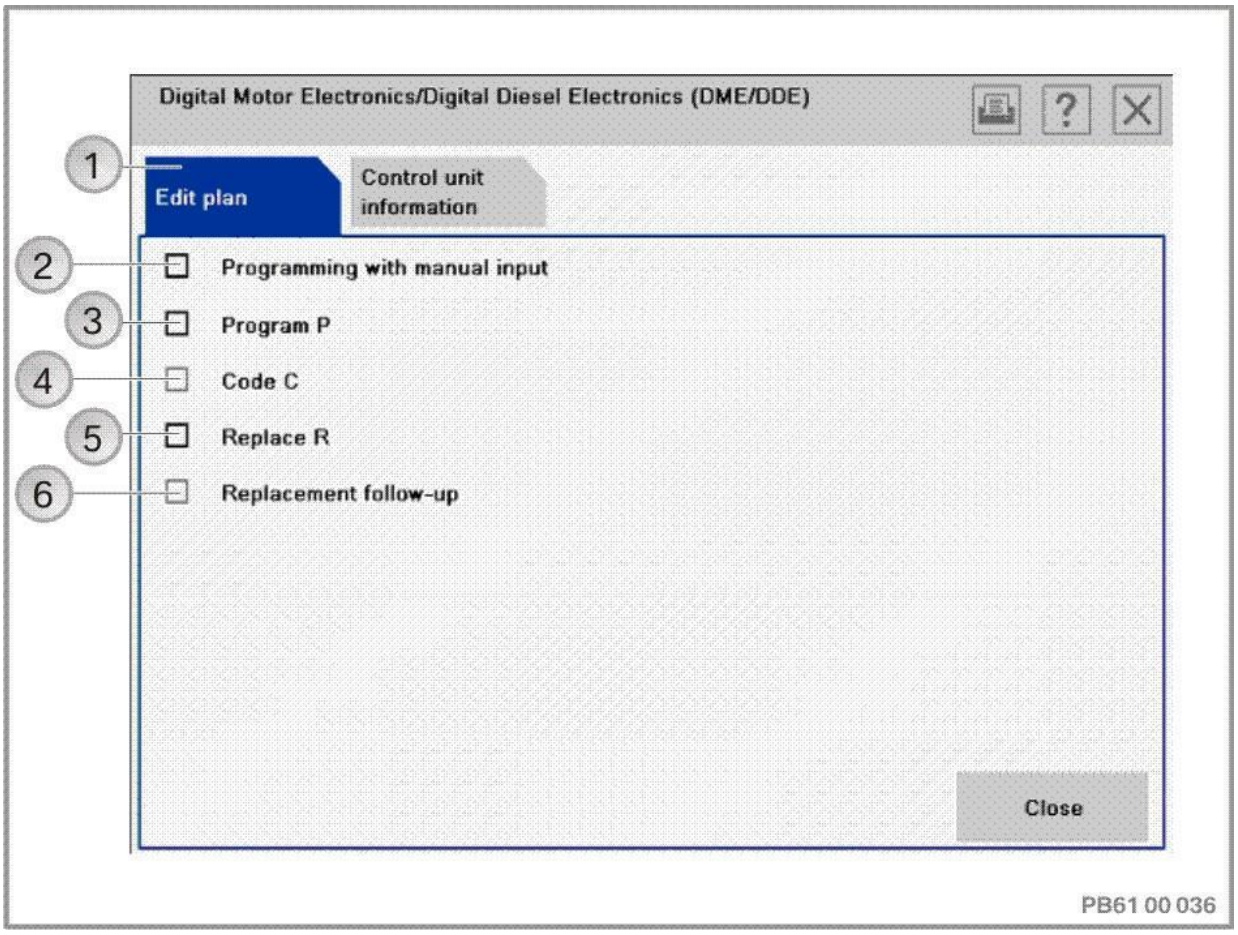
Procedure for programming using manual input using the example of DME/DDE

- Create New Session. see "'Session" menu (create new session), page 32"

After successful determination of the target context the vehicle details are displayed. The details are presented in the "Programming" menu.

- Select the "Control unit tree" or "Edit control units" tab.
- Select DME/DDE control unit

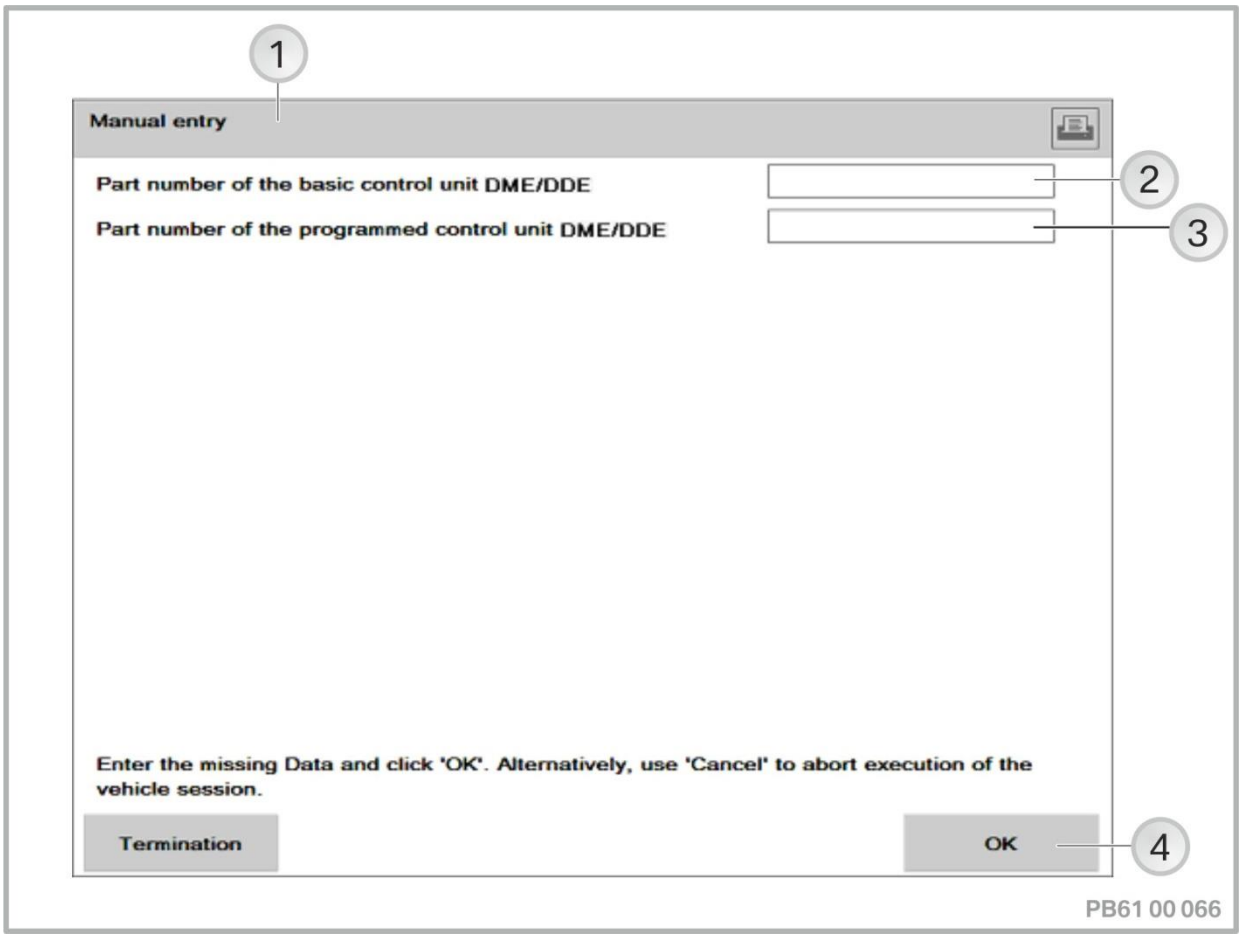
Selection of control unit actions is displayed:



Index	Screen element	Index	Screen element
1	"Edit plan" tab	2	Programming with manual input
3	Programming	4	Encoding
5	Replacement	6	Replacement follow-up

- Activate "Programming using manual input"check box

The dialogue box for manual input is displayed:



Index	Screen element	Index	Screen element
1	"Manual entry" dialogue box	2	"Part number of basic control unit" input box
3	Input box "Part number of programmed control unit"	4	"OK" button

NOTE:

The part number to be entered is taken from the technical campaign.

Contact technical market support in the event of incorrectly programmed control units or missing part numbers.

- Enter "Part number of basic control unit"
- Enter "Part number of programmed control unit"
- Press the "OK" button to acknowledge

Selection of control unit action is displayed.

- Confirm with "Close" button.

For further procedure, see the vehicle-specific chapter Vehicle programming/encoding:

- "BMW: Programming routine, E-Series from E36, page 148" (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93)
- "MINI: Programming routine, page 177“

18. Control unit replacement

To ensure the operability of new control units it is necessary to set the control units in the vehicle to a compatible status (software, encoding and enabling if necessary). In addition, the control unit-specific data (e.g. individual data, etc.) must be read out of the control unit to be replaced and transferred to the new control unit.

IMPORTANT!

The described replacement procedure must be followed precisely.

Replacement preparation distinguishes between two possible options:

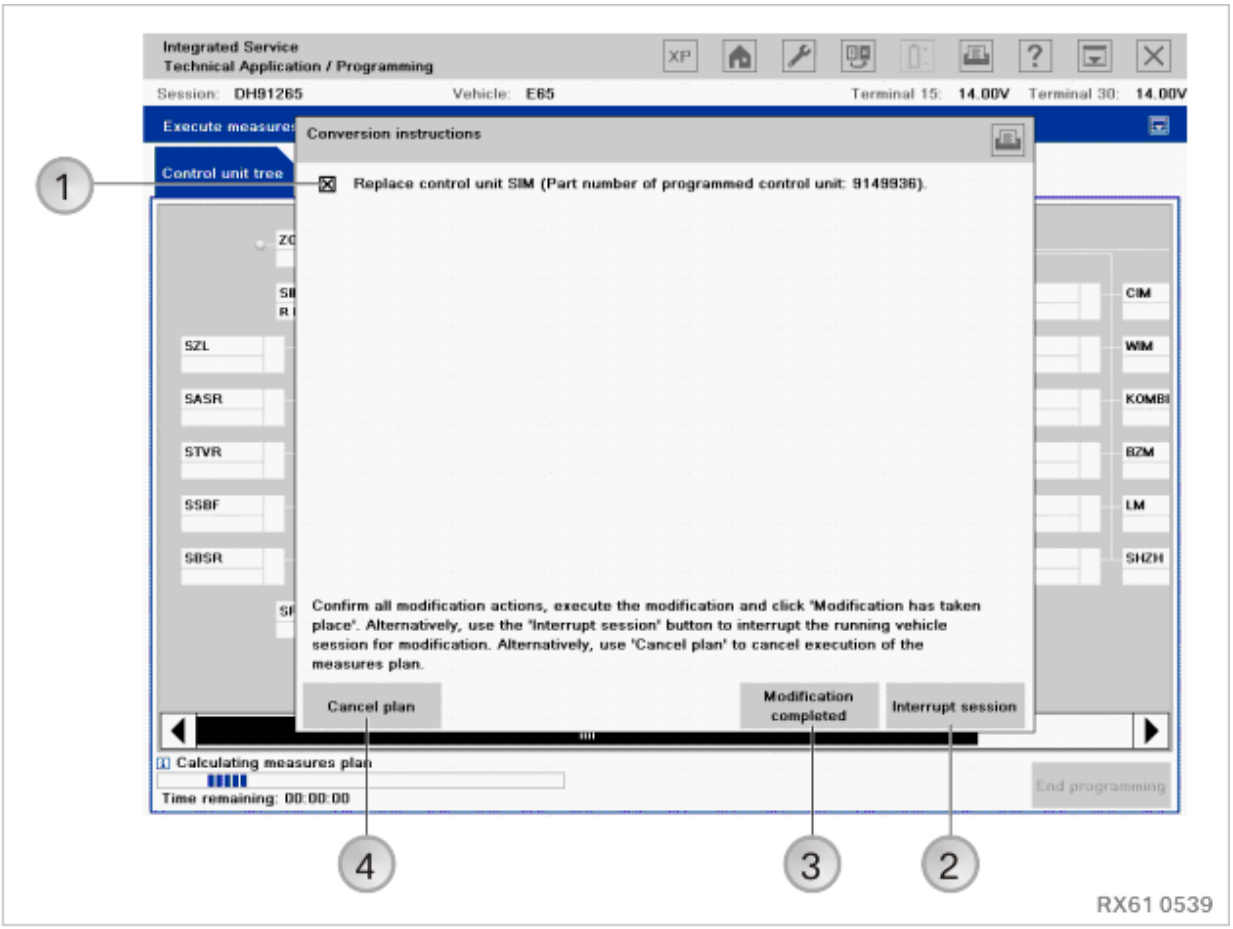
- Replacing control units with session interruption
- Replacing control units without session interruption

Sole exception!

The third option without replacement preparation is used only when the control unit to be replaced can no longer be read by ISTA/P:

- Replace control units with "**Replacement follow-up**", see page 102.

18.1. Dialogue box "Conversion instructions" for control unit replacement:



Index	Screen element	Index	Screen element
1	"Replacing control unit" checkbox	2	"Interrupt session" button Replacing control units with session interruption
3	"Conversion is complete" button, Replacing control units without session interruption	4	"Planned cancellation" button The session is cancelled

See following pages for control unit replacement procedure:

18.2. Replacement preparation - replace control units with session interruption (see index 2, page 97)

User action	Result
Start ISTA/P session. Select "Create new session" tab. Select ISTA/P server automatically/manually.	Connection manager is shown.
Select ICOM. Press the "Connect" button to acknowledge.	The "Session preparation" dialogue box is displayed. • Query: "Have control units been replaced?" • Note: "Before start of vehicle programming…", see "Preparation and subsequent evaluation of vehicle programming/encoding, page 17".
• Query: Select "**No**" button. • Note: Follow the notes. Activate checkboxes and press the "Continue" button to confirm.	Vehicle details are shown.
Select the "Control unit tree" or "Edit control units" tab. Select control unit to be replaced. Activate "Replace" checkbox. Other actions can be selected. Press the "Determine action plan" button to acknowledge.	If control units are to be replaced in the course of the action plan, they are marked with a red dot and under "Replace R". The action plan is determined and displayed.
Check action plan for completeness and correctness. Print out action plan. Press the "Accept action plan" button to acknowledge.	The dialogue box "Instructions before start of action plan execution" is possibly displayed.
Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The "Conversion instructions" dialogue box is possibly displayed.

Press the "Interrupt session" button to acknowledge.	The dialogue box "End session now…" is displayed.
Follow notes and note if necessary. Press the "OK" button to acknowledge.	Final report is shown
Check final report for completeness and faults. Follow instructions. Print out final report. Confirm "End session" button.	Session overview is shown.
Replace control units according to repair instructions.	
Start ISTA/P session. Select "Create new session" tab. Select ISTA/P server automatically/manually.	Connection manager is shown.
Select ICOM. Press the "Connect" button to acknowledge.	The "Saved session found" dialogue box is displayed.
Press the "Yes" button to acknowledge.	The "Conversion instructions" dialogue box is possibly displayed.
Activate checkboxes of replaced control units. Press the "Conversion is complete" button to acknowledge.	Dialogue box "Update of action plan complete" is displayed.
Follow notes and note if necessary. Press the "Next" button to acknowledge.	The "Enable Code Import" dialogue box may be displayed. See "'Data management" menu, page 45“, import enable code. The dialogue box "Notes before beginning the service functions" may be displayed.
Follow notes and note if necessary. Press the "OK" button to acknowledge.	The "Existing fault code entries" dialogue box may be displayed. Dialogue box "Important notes after completion of action plan execution" is shown.
Follow instructions and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The action plan is executed. The "Session follow-up work" dialogue box may be displayed.
Follow instructions and note if necessary. Press the "OK" button to acknowledge.	Final report is shown

Check final report for completeness and faults. Follow instructions. Print out final report. Confirm "End session" button.	Programming is ended ISTA/P switches to the Session menu.

18.3. Replacement preparation - replace control units without session interruption (see index 3, page 97)

User action	Result
Start ISTA/P session. Select "Create new session" tab. Select ISTA/P server automatically/manually.	Connection manager is shown.
Select ICOM. Press the "Connect" button to acknowledge.	The "Session preparation" dialogue box is displayed. • Query: "Have control units been replaced?" • Note: "Before start of vehicle programming…", see "Preparation and subsequent evaluation of vehicle programming/encoding, page 17".
• Query: Select "**No**" button. • Note: Follow the notes. Activate checkboxes and press the "Continue" button to confirm.	Vehicle details are shown.
Select the "Control unit tree" or "Edit control units" tab. Select control unit to be replaced. Activate "Replace" checkbox. Other actions can be selected. Press the "Determine action plan" button to acknowledge.	If control units are to be replaced in the course of the action plan, they are marked with a red dot and under "Replace R". The action plan is determined and displayed.
Check action plan for completeness and correctness. Print out action plan. Press the "Accept action plan" button to acknowledge.	The dialogue box "Instructions before start of action plan execution" is possibly displayed.
Follow instructions and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The "Conversion instructions" dialogue box is possibly displayed.

Replace control units according to repair instructions.	
Activate checkboxes of replaced control units. Press the "Conversion is complete" button to acknowledge.	Dialogue box "Update of action plan complete" is displayed.
Follow notes and note if necessary. Press the "Next" button to acknowledge.	The "Enable Code Import" dialogue box may be displayed. See "'Data management" menu, page 45“, import enabling code. The dialogue box "Notes before beginning the service functions" may be displayed.
Follow notes and note if necessary. Press the "OK" button to acknowledge.	The "Existing fault code entries" dialogue box may be displayed. Dialogue box "Important notes after completion of action plan execution" is shown.
Follow instructions and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The action plan is executed. The "Session follow-up work" dialogue box may be displayed.
Follow instructions and note if necessary. Press the "OK" button to acknowledge.	Final report is shown
Check final report for completeness and faults. Follow instructions. Print out final report. Confirm "End session" button.	

18.4. Replacement follow-up

IMPORTANT!

Replace control unit via replacement follow-up only if the old control unit no longer responds.

User action	Result
Replace control units according to repair instructions.	
Start ISTA/P session. Select "Create new session" tab. Select ISTA/P server automatically/manually.	Connection manager is shown.
Select ICOM. Press the "Connect" button to acknowledge.	The "Session preparation" dialogue box is displayed. • Query: "Have control units been replaced?" • Note: "Before start of vehicle programming…", See "Preparation and subsequent evaluation of vehicle programming/encoding, page 17".
• Query: Select "**Yes**" button. • Note: Follow the notes. Activate checkboxes and press the "Continue" button to confirm.	Dialogue box "Select replaced control units…" is displayed.
Activate checkboxes of replaced control units. Press the "Next" button to acknowledge.	Vehicle details are shown.
Other actions can be selected. Press the "Determine action plan" button to acknowledge.	The action plan is determined and displayed.

Check action plan for completeness and correctness. Print out action plan. Press the "Accept action plan" button to acknowledge.	The "Enable Code Import" dialogue box may be displayed. See ""Data management" menu, page 45“, import enabling code. The dialogue box "Notes before beginning the service functions" may be displayed.
Follow notes and note if necessary. Press the "OK" button to acknowledge.	The "Existing fault code entries" dialogue box may be displayed. Dialogue box "Important notes after completion of action plan execution" is shown.
Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The action plan is executed. The "Session follow-up work" dialogue box may be displayed.
Follow instructions and note if necessary. Press the "OK" button to acknowledge.	Final report is shown
Check final report for completeness and faults. Follow instructions. Print out final report. Confirm "End session" button.	

19. Mandatory and special measure, gateway repair and general measures in ISTA/P

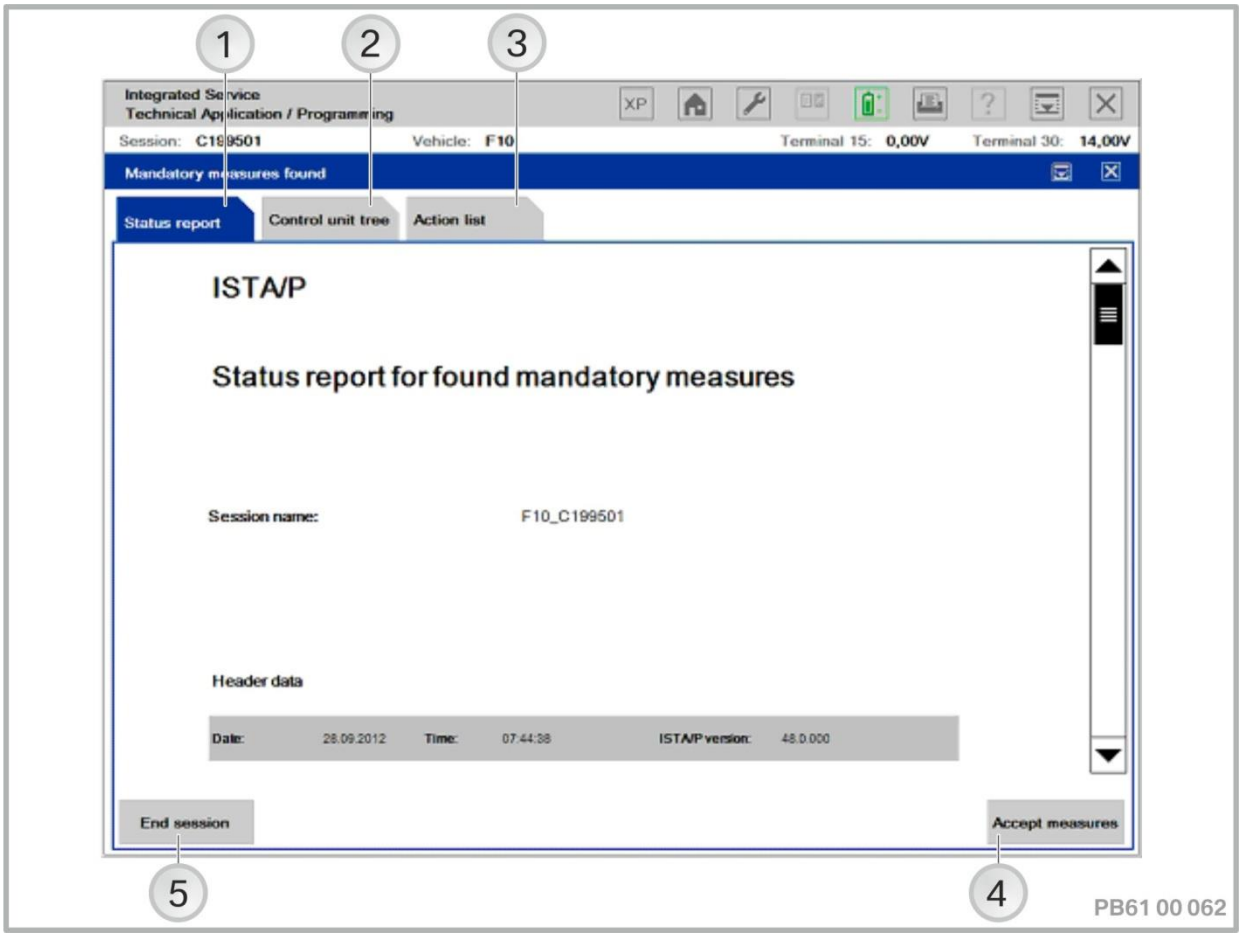
Available for following model series:

- BMW , F-, G-, and I-series
- BMW E-series with vehicle electrical system 2000 (E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E84, E87, E88, E89, E90, E91, E92, E93)
- MINI R55, R56, R57, R58, R59, R60, R61
- Rolls-Royce

19.1. Mandatory measure

If the vehicle does not respond correctly during the vehicle identification (e.g. terminal 15 missing, gateway ZGM does not route), a required measure is issued and determined.

The status report for found mandatory measures is displayed:



Index	Screen element	Index	Screen element
1	"Status report" tab	2	"Control unit tree" tab Planned actions are shown
3	"Action list" tab Planned actions are shown	4	"Accept measures" button Measures are executed
5	"End session" button Session is ended		

Perform mandatory measure:

NOTE:

If the vehicle order cannot be read out from the vehicle, the vehicle order import can take place via ISTA/P, see "**Conversions and retrofits, importing the vehicle order, IBAC enabling codes**" – section"**Performing a vehicle order import (specification by ISTA/P)**", page 59.

User action	Result
Start ISTA/P session. Select "Create new session" tab. Select ISTA/P server automatically/manually.	Connection manager is shown.
Select ICOM. Press the "Connect" button to acknowledge.	The dialogue box "Voltage test terminal 15" is displayed.
If there are problems with the supply voltage (terminal 15), follow the instructions of the programming system. • If necessary, press the "Ignition is switched on" button to acknowledge.	The "Session preparation" dialogue box is displayed. • Query: "Have control units been replaced?" • Note: "Before start of vehicle programming…", see “Preparation and subsequent evaluation of vehicle programming/encoding, page 17“.

• Query: Select "**No**" button. (preselection by ISTA/P). • Note: Follow the notes. Activate checkboxes and press the "Continue" button to confirm.	The dialogue box "Voltage test terminal 15" is displayed.
If there are problems with the supply voltage (terminal 15), follow the instructions of the programming system. • If necessary, press the "Ignition (term. 15) correct“ button to acknowledge.	The dialogue box "Voltage test terminal 15" is displayed.
If necessary, check the "Bus system" request and acknowledge.	The dialogue box "Necessary measure" opens, if applicable.
If there are problems with the supply voltage (terminal 15), follow the instructions of the programming system. • Press the "OK" button to acknowledge.	The "status report for found mandatory measures" is displayed, see page 105. The following tabs are displayed: "Status report" "Control unit tree" "Action list".
Note the identified problems and the suggested measures. Follow instructions. Print out status report. • If necessary, press the "Accept measures" button to acknowledge.	Measures are executed. • Vehicle details are shown.
• Press the "Determine action plan" button to acknowledge.	The special action plan is determined and displayed.
Check the special action plan for completeness and correctness. Follow instructions. Print out the special action plan. • Press the "Accept action plan" button to acknowledge.	Measures are executed, e.g.: • The "Existing fault code entries" dialogue box may be displayed. • The dialogue box "Important notes after completion of measures plan execution" is possibly displayed.

Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The final report is displayed in the menu "Action plan execution complete". The following tabs are displayed: "Final report" "Control unit tree" "Action list".
• Check final report for completeness and faults. Follow instructions. • Print out final report. • Confirm "End session" button.	Vehicle processing is ended ISTA/P switches to the Session menu.
Start new ISTA/P session.	

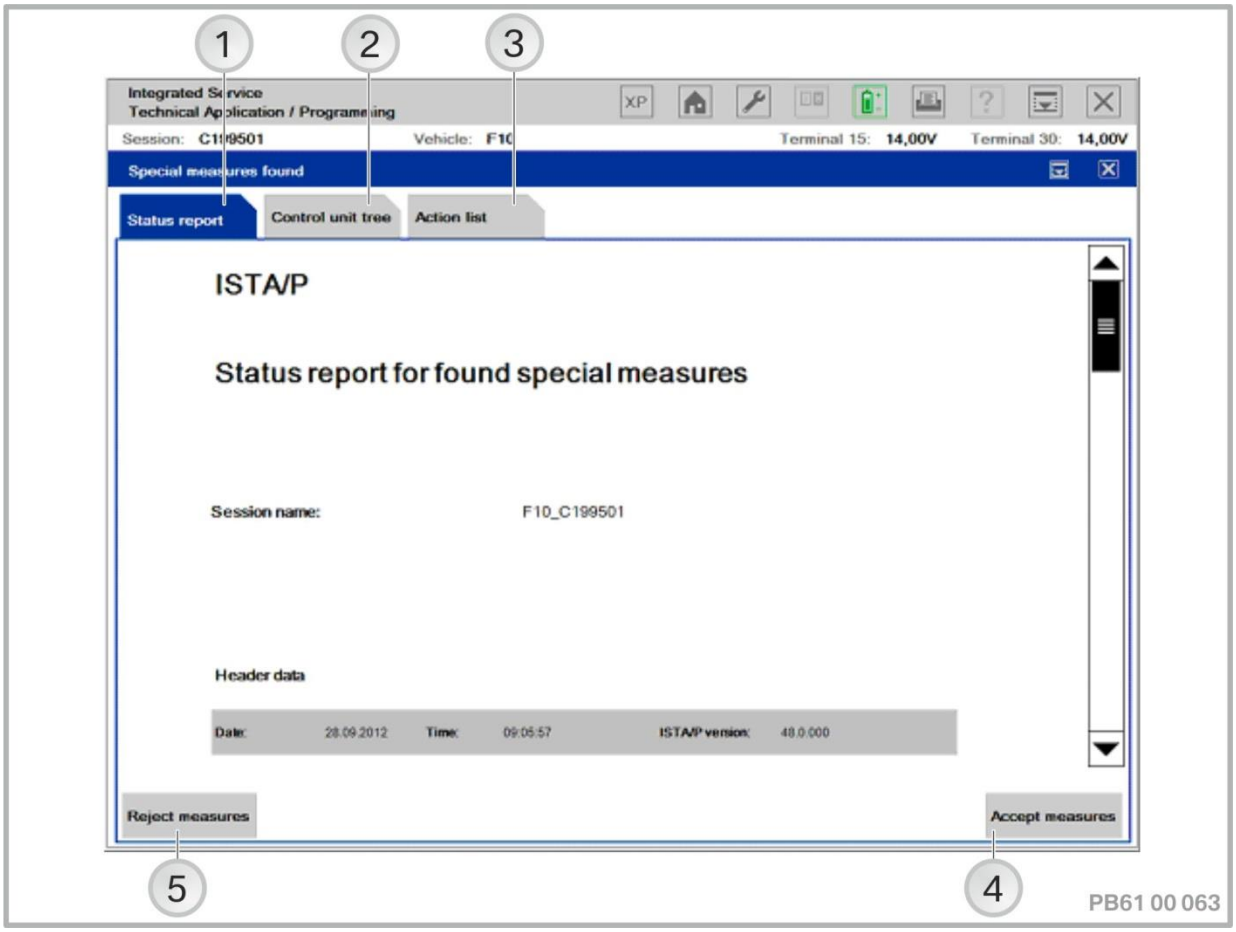
For further vehicle programming/encoding procedure, see vehicle-specific section "Vehicle programming/encoding" or following special measure:

- "BMW: Programming routine for F-, G- and I-series, page 133“
- "BMW: Programming routine, E-Series from E36, page 148" (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93)
- "MINI: Programming routine, page 177“
- "Rolls-Royce: Programming routine, page 200 ".

19.2. Special measure

A special measure is issued and determined if the gateway of a control unit (z. B. CIC, SIM) or the control unit itself does not correctly respond during determination of the target context.

The "Status report for found special measures" is displayed:



Index	Screen element	Index	Screen element
1	"Status report" tab	2	"Control unit tree" tab, The control unit tree with the scheduled actions is displayed
3	"Action list" tab The scheduled actions are displayed in the form of a table	4	"Accept measures" button Measures are executed
5	"Reject measure" button Determination of the target context is executed without special measure		

NOTE:

Only vehicle electrical system 2000: The part number of the programmed control unit can only be read out, before a new session is started. To read out the part number of the programmed control unit, see "**Read out part number of control unit to be programmed**", page 88.

Executing special measures:

NOTE:

If the vehicle order cannot be read from the vehicle, the vehicle order import can be done by ISTA/P, see chapter " **Conversions and retrofitting, importing the vehicle order, IBAC enabling codes**" - section "**Performing a vehicle order import (specification by ISTA/P)**" , page 59.

User action	Result
Start ISTA/P session. Select "Create new session" tab. Select ISTA/P server automatically/manually.	Connection manager is shown.
Select ICOM. Press the "Connect" button to acknowledge.	"Session preparation" dialogue box is displayed. • Query: "Have control units been replaced?" • Note: "Before start of vehicle programming…", see “Preparation and subsequent evaluation of vehicle programming/encoding, page 17“.
• Query: Select "**No**" button. (preselection by ISTA/P). • Note: Follow the notes. Activate checkboxes and press the "Continue" button to confirm.	The "status report for found special measures" is displayed, see page 109. The following tabs are displayed: "Status report" "Control unit tree" "Action list".

Note the identified problems and the suggested measures. Follow instructions. Print out status report. • Acknowledge "Accept measures" button or • Press the "Reject measures" button to acknowledge. **ATTENTION!** Rejection of the special-action plan will result in vehicle processing in the framework of the normal action plan. Under these circumstances, however, the special measures as stated in the status report will not be taken into account. This procedure may endanger or prevent a normal vehicle processing.	Measures are executed. • The "Manual entry" dialogue box is displayed if applicable (only in vehicles with vehicle electrical system 2000). • Vehicle details are shown.
• "Manual entry" for part number of the basic control unit and/or part number of the programmed control unit (only in vehicles with vehicle electrical system 2000). See "**Enter part number of control unit to be programmed**", page 90. • Press the "Determine action plan" button to acknowledge.	The special action plan is determined and displayed.
Check the special action plan for completeness and correctness. Follow instructions. Print out the special action plan. • Press the "Accept action plan" button to acknowledge.	Measures are executed, e.g.: • The "Existing fault code entries" dialogue box may be displayed. • The dialogue box "Important notes after completion of measures plan execution" is possibly displayed.

Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The final report is displayed in the menu "Action plan execution complete". The following tabs are displayed: "Final report" "Control unit tree" "Action list".
• Check final report for completeness and faults. Follow instructions. • Print out final report. • Confirm "End session" button.	Vehicle processing is ended ISTA/P switches to the Session menu.
Start new ISTA/P session.	

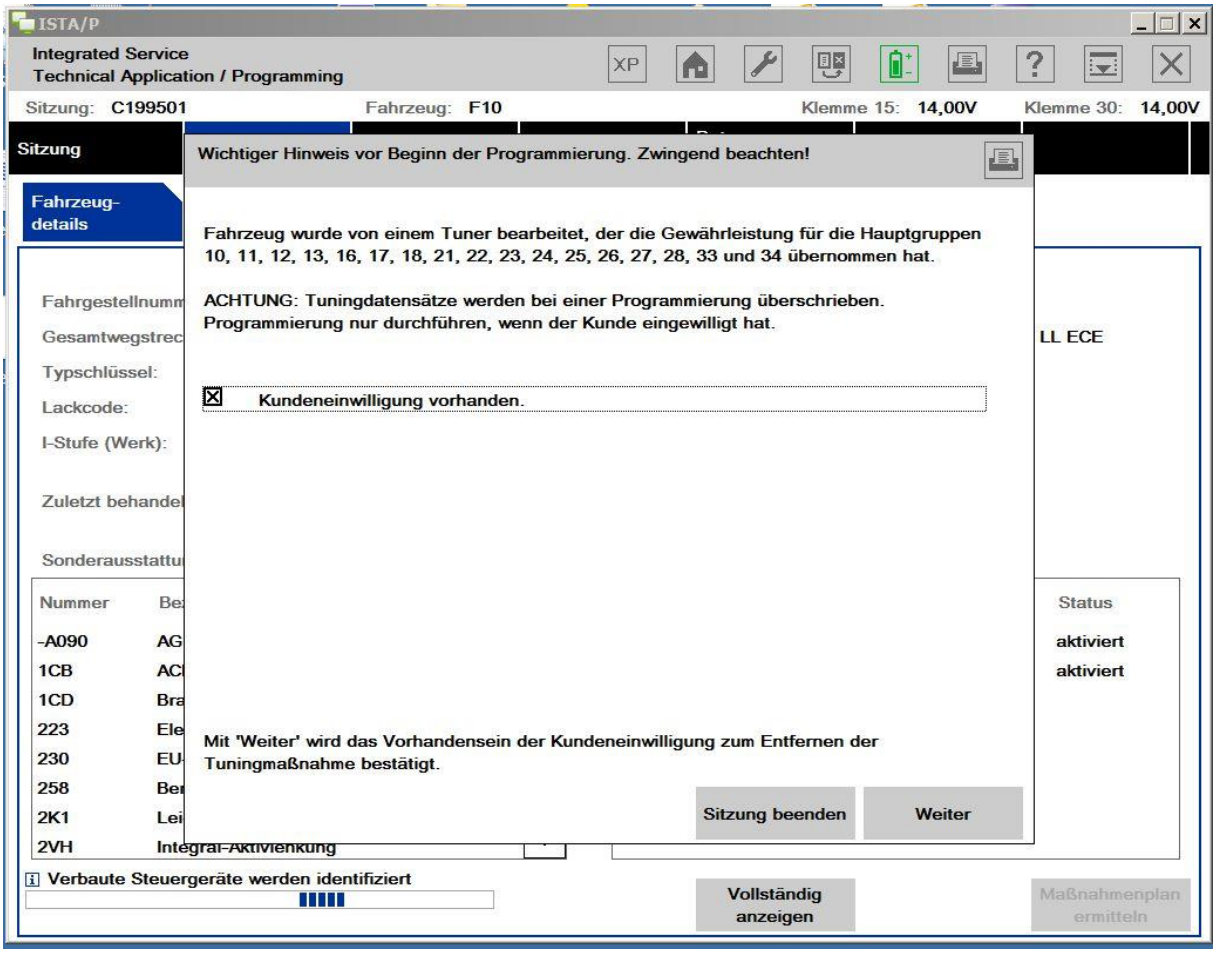
For further vehicle programming/encoding procedure, see vehicle-specific section "Vehicle programming/encoding":

- "BMW: Programming routine for F-, G- and I-series, page 133“
- "BMW: Programming routine, E-Series from E36, page 148" (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93)
- "MINI: Programming routine, page 177“
- "Rolls-Royce: Programming routine, page 200 ".

19.3. Detection and removal of tuning measures

If, at the beginning of vehicle treatment using ISTA/P, tuning of the engine control is detected, a pop-up with the following note appears:

"Attention: Tuning data records are overwritten during programming.
Only perform the programming if the customer has given consent."



If programming is continued by clicking "Continue", all engine control tuning measures are removed.
The customer's consent must be obtained first.

NOTE!

This measure does not affect approved increases in performance like the BMW Performance power kit!

Once the customer has given their consent for the tuning to be removed, please proceed as follows:

- Select the "Customer consent present" checkbox and then confirm by clicking "Continue".
- The existing engine tuning data records of the engine control will now be overwritten and the session can be continued.

After successful treatment of the vehicle, the following note is displayed in the final report under "Concluding work, notes":

"The vehicle was worked on by a tuner.
The customer consent for working on the vehicle, and by doing this the removal of the tuning measures, was obtained."

Abschließende Arbeiten, Hinweise

Nummer	Tätigkeit/Hinweis
1.	Das Fahrzeug wurde von einem Tuner behandelt. Die Kundeneinwilligung zur Behandlung des Fahrzeugs und somit auch zum Entfernen der Tuningmaßnahme wurde eingeholt.

19.4. Confirmation/suppression of the "Enabling code deactivation" function

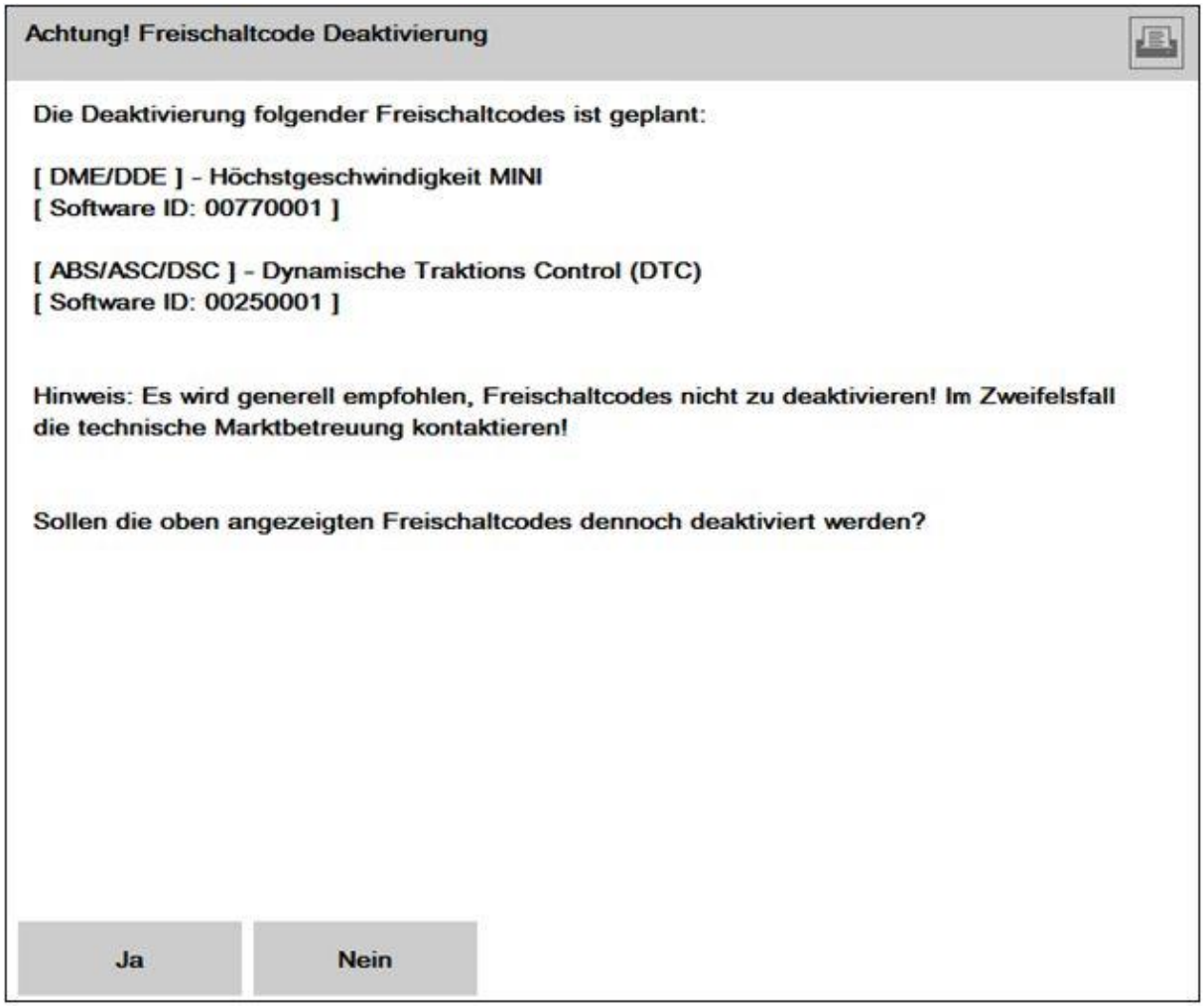
As a result of an enabling error in the software, enabling codes may be deactivated. This can result in deactivation of enhanced vehicle functions. For this reason, automatic suppression of enabling code deactivation has been implemented.

If one of the following interactions is performed, the service technician can decide autonomously whether to deactivate the enabling codes.

- Conversion/retrofitting
- Vehicle order import

In this case, the following pop-up is displayed:

"The deactivation of the following enabling codes is planned:"
"Should the above displayed enabling codes still be deactivated?"



The service technician is given two options.

- To confirm deactivation of the enabling code, continue with "Yes".
- To suppress deactivation of the enabling code, continue with "No".

IMPORTANT!

If deactivation takes place, all the enabling codes listed in the pop-up are deactivated!

As the manual deactivation of enabling codes can result in the deactivation of enhanced vehicle functions, please observe the following note:

"Note: It is generally recommended to not deactivate the enabling codes! In cases of doubt, contact Technical Market Support!"

20. Updating and enabling navigation system map data, updating Gracenote®*

An update of map data by ISTA/P is only possible for navigation systems with integrated hard disk or flash memory (e.g. CIC/Car Information Computer, CHAMP2 or HU-H/Head Unit High).

An up-to-date road map needs to be loaded into the vehicle:

- In the event of updating or initialisation of the data for new, used and demonstration cars prior to delivery to customer
- In the event of updating by customer request
- A repair has been carried out
- In case of a retrofitting.

The procedure for updating Gracenote® and the map data is identical. Updating of Gracenote® is only possible with the Professional navigation system (SA 609).

Enabling of navigation map (road map) with ISTA/P is necessary:

- After updating or initialisation of the map data
- In case of a repair
- In case of retrofitting.

NOTE:

- No enabling code has to be ordered within the framework of a repair. In this case the previous enabling code is used again.
- No update of the integration level is required for updating the map data of the navigation system (HDD-Update*). Measures for updating the integration level can be rejected. The "Control Unit Tree" tab must be selected for this purpose. The "Reject measures" button should be pressed.
- The following navigation maps (road maps) are exceptions:
    - China PREMIUM 2012 (and future versions),
    - Arabian Gulf MOVE 2011 (and future versions).

  For these navigation maps the HDD-Update is dependent on the integration level status. The integration level status must be updated by ISTA/P if necessary. After the HDD update is selected, ISTA/P creates the necessary measures. This guarantees that the integration level is always updated to the latest version before the HDD-Update.

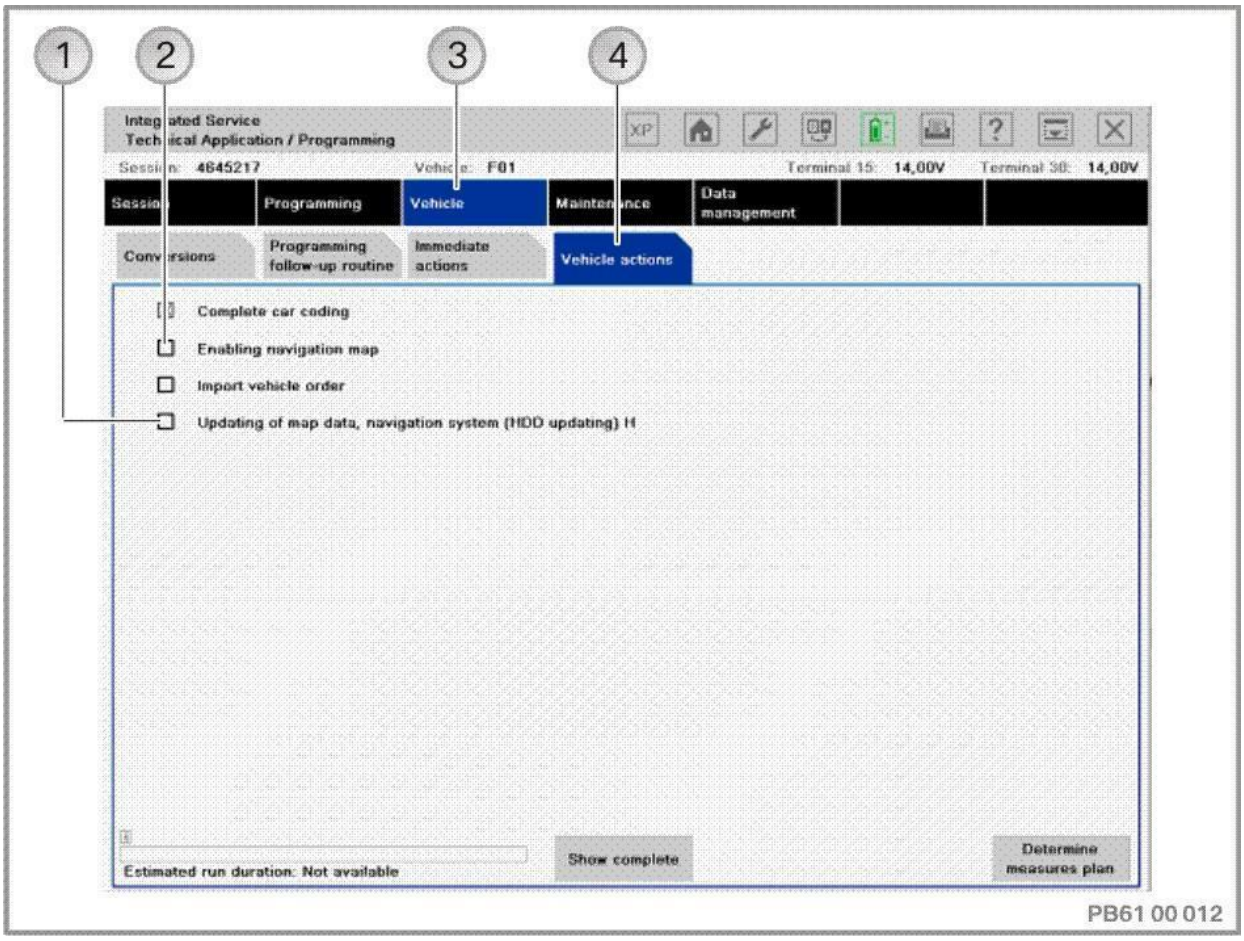
20.1. Updating the navigation system map data or Gracenote®

Proceed as follows to update the navigation system map data (HDD update) or Gracenote®:

- Create a new ISTA/P session, see
  ""Session" menu (create new session), page 32"
- Select the "Vehicle" menu
- Select the "Vehicle actions" tab

NOTE:

- Installation of the navigation maps (road maps) and Gracenote® should be carried out on the ISPS as a preference, as there is greater memory capacity there.
- Due to the higher data transfer rates, it is recommended to update the navigation system map data (HDD update*) via ISPS.



Index	Screen element	Index	Screen element

1	Checkbox "Update of the navigation system map data (HDD update)"	2	Activate checkbox "Enabling of navigation map", already imported map
3	"Vehicle" menu	4	"Vehicle actions" tab

- Activate checkbox "Update of the navigation system map data (HDD update)"

NOTE:

A HDD-Update can also be performed without updating the integration level. For this purpose, confirm with the "Delete measures" button in "Control unit tree" or in the control unit list. All measures determined based on the target context are removed. Control unit actions that are relevant for updating the integration level cannot be manually selected.

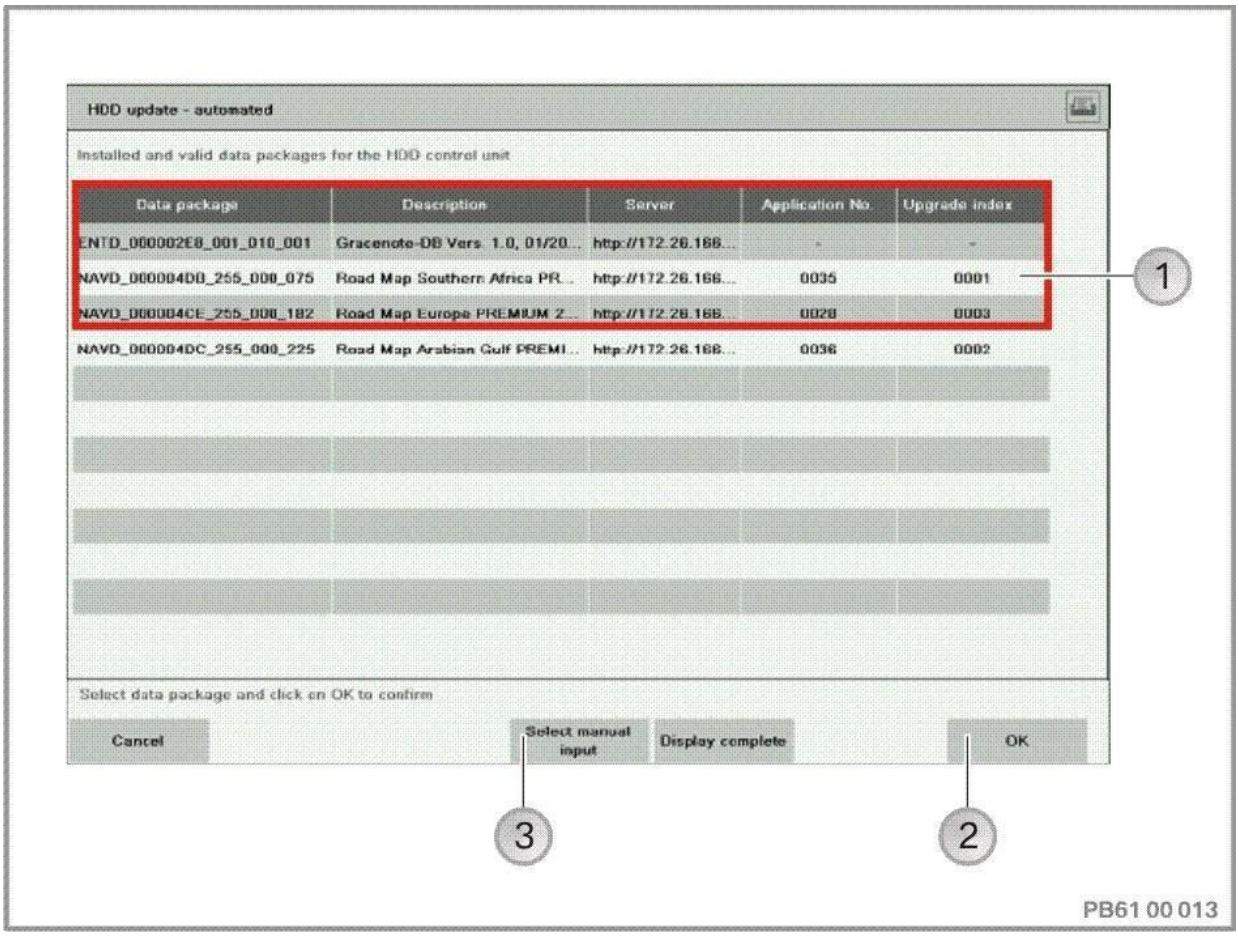
The following navigation maps (road maps) are an exception:

- China PREMIUM 2012 (and future versions)
- Arabian Gulf MOVE 2011 (and future versions)

For these navigation maps the HDD-Update is dependent on the integration level status. The integration level status must be updated by ISTA/P if necessary. The measures determined for an update of the integration level can be rejected. After selection of the HDD-Update however, ISTA/P re-establishes the determined measures. This guarantees that the integration level is always updated to the latest version before the HDD-Update.

Automatic selection:

ISTA/P displays only the valid navigation maps (road maps) and Gracenote® for the vehicle that were installed beforehand on ISIS or ISPS:



Index	Screen element	Index	Screen element
1	Road maps	2	"OK" button
3	"Select manual entry" button Switch to "Manual selection“		

NOTE:

The map data and Gracenote® cannot be updated at the same time.

- Select Gracenote® or "Road Map"
- Press the "OK" button to acknowledge

To select further actions (programming, encoding), switch back to the "Programming" menu.

- Determine measures plan

A request to import the enabling code is displayed. For enabling navigation map (road map), section "**The remaining procedure depends on the import of the enabling code**“, see page 125.

NOTE:

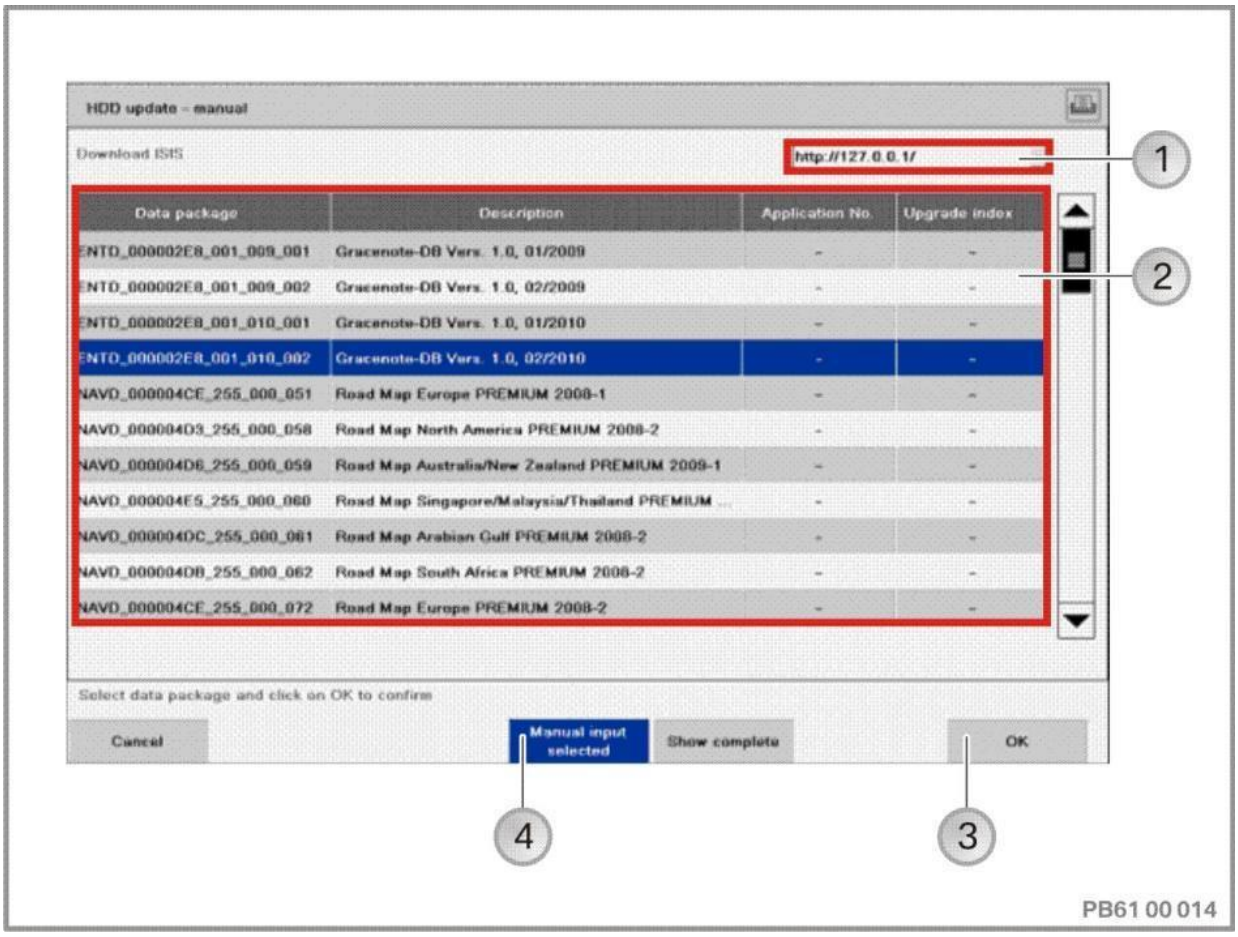
Enabling is not required to import Gracenote®.

Manual selection:

If the ISIS or ISPS map server is not accessible, ISTA/P switches to manual selection.

- If necessary confirm dialogue box
- Conform the "Manual input selected" button

After manual input of the IP address for the accessible map server, all navigation maps (road maps) and Gracenote® available there are displayed:



Index	Screen element	Index	Screen element
1	Input box "Download ISIS IP:"	2	Road maps
3	"OK" button	4	"Manual input selected" button

NOTE:

The ISIS or ISPS server address on which the navigation maps with the web copy console are saved must be entered in the "Download-ISIS IP" input box.
It is therefore identical to the ISIS or ISPS IP address which was used by the web copy console (http://<IP address ISIS or ISPS>:81/mapcopy, e.g. http://127.0.0.1:81/mapcopy).
The ISIS or ISPS IP can be read out in the WSM under device settings.
The map data and Gracenote® cannot be updated at the same time.
Make sure that the selected "road map" is installed on the ISIS or ISPS, or install if necessary.

- Enter the download ISIS IP (e.g. http://127.0.0.1:81/) in the input box.
- Select Gracenote® or "Road Map"
- Press the "OK" button to acknowledge

To select further actions (programming, encoding), switch back to the "Programming" menu.

- Determine measures plan

A request to import the enabling code is displayed. For enabling navigation map (road map), section "**The remaining procedure depends on the import of the enabling code**“, see page125.

NOTE:

Enabling is not required to import Gracenote®.

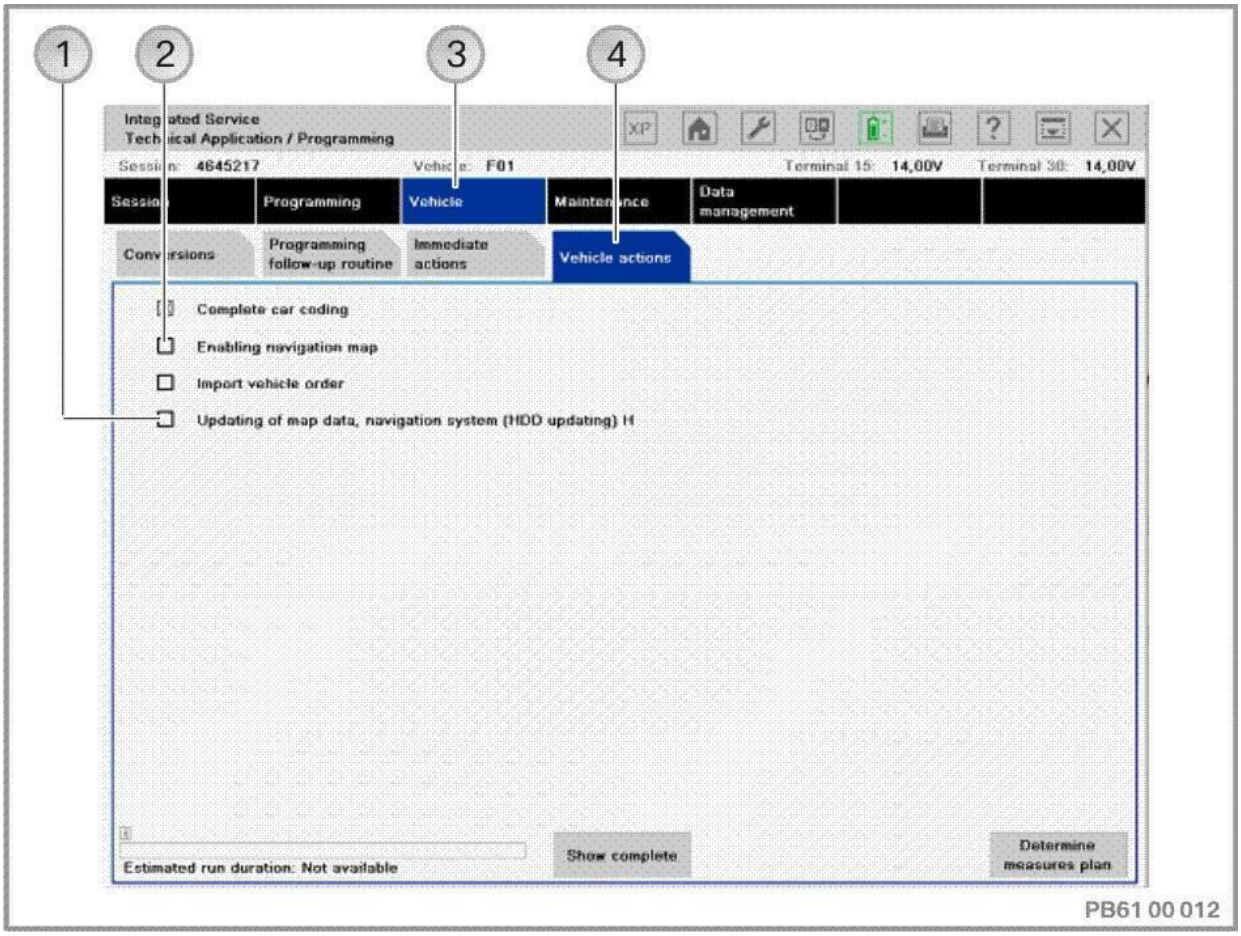
20.2. Enabling road map:

An enabling code is needed to enable the navigation map. Ordering the enable code, see ""Data management" menu, page 45“.

The enabling code can be imported into ISTA/P in the following ways:

- Import via Data management before the start of the session
- Import via SWT Online after action plan has been accepted
- Import via external storage medium (e.g.: USB stick, CD), after action plan has been accepted.

Proceed as follows to activate the map data for the navigation system:



Index	Screen element	Index	Screen element
1	Checkbox "Update of the navigation system map data (HDD update)"	2	Activate checkbox "Enabling of navigation map", already imported map
3	"Vehicle" menu	4	"Vehicle actions" tab

To activate an already loaded map (e.g. new vehicle):

- Activate the checkbox "Enabling of navigation map"
- Press the "Determine action plan" button to acknowledge

The subsequent procedure depends on the import of the enable code:

20.3. Import via Data management

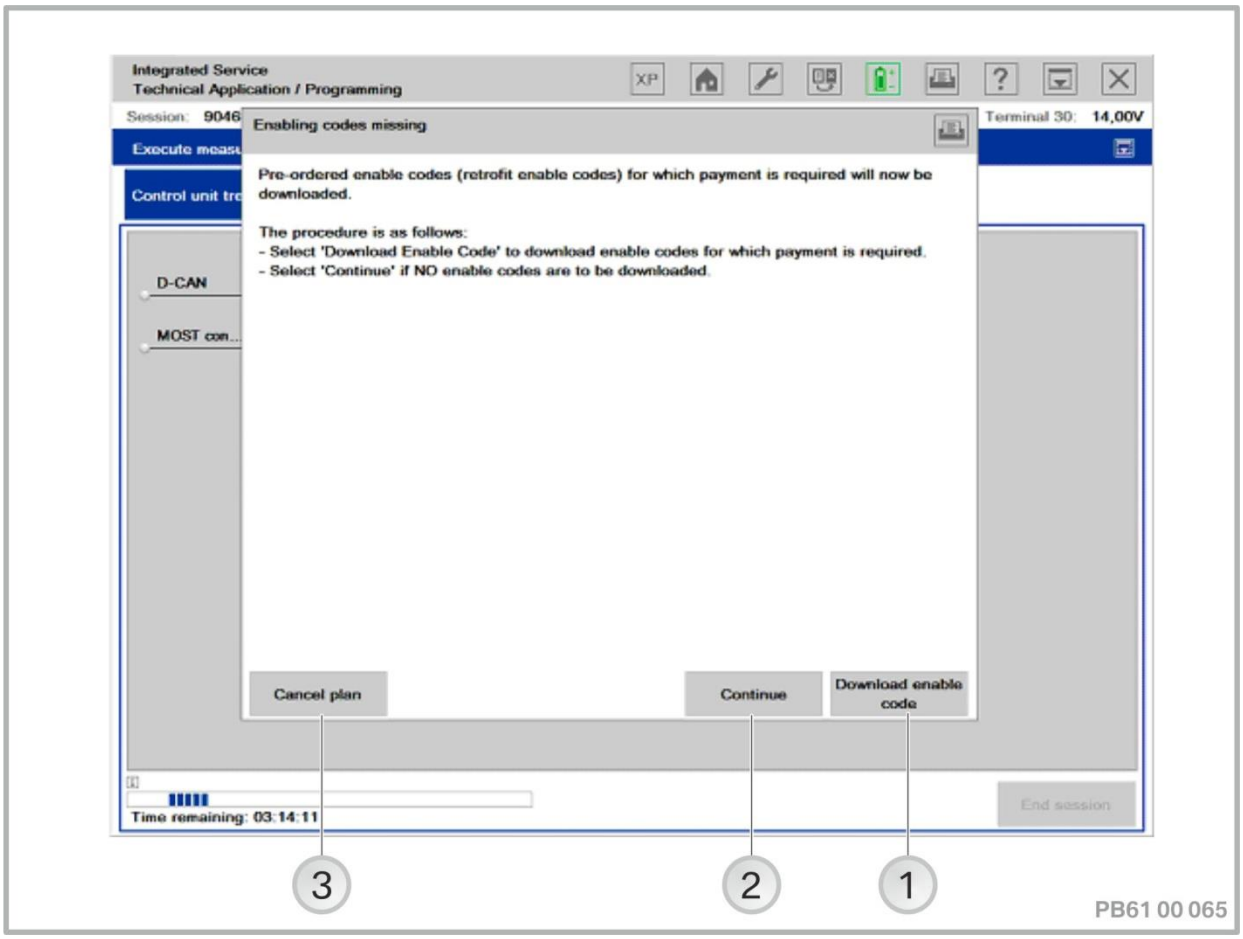
The enabling code that is needed is imported from the data management system. After the action plan has been completed, the final report will be displayed.

NOTE:

Execute import of enabling code or entry of "short" enabling code in data management beforehand, see "'Data management" menu, page 45".

20.4. Import via SWT online

The "Missing enabling codes" pop-up is displayed:



Index	Screen element	Index	Screen element
1	"Download enable code" button; the required enabling code is imported	2	"Next" button, When no enabling code is to be downloaded. See "**Import via external storage medium (e. g.: USB stick, CD)**", page 128.
3	"Plan aborted" button, the execution of the action plan is aborted		

- Acknowledge "Download enabling code“ button.

The required enabling code is imported. After the action plan has been completed, the final report will be displayed.

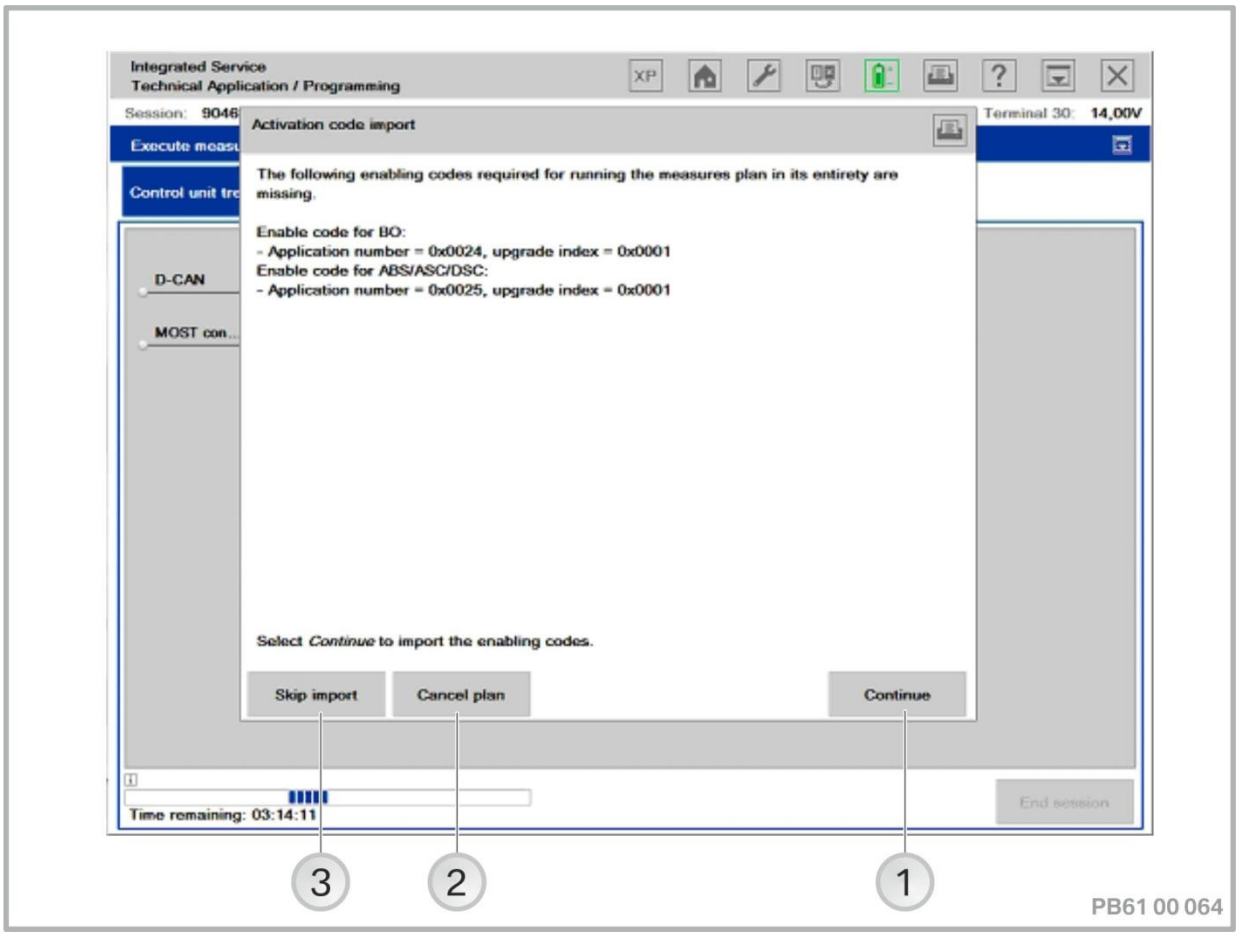
If a required enabling code is not available in the workshop network at the start of the measures plan, the user is requested to import / order the enabling code while the measures plan is being processed.

20.5. Import via external storage medium (e.g.: USB stick, CD)

The "Missing enabling codes" pop-up is displayed. See "**Import via SWT online**", page 126.

- Press the "Next" button to acknowledge.

The "Enabling code import" pop-up is displayed:



Index	Screen element	Index	Screen element
1	"Next" button, The enabling code is imported from the data carrier.	2	"Plan cancellation" button Execution of the action plan is aborted
3	"Skip import" button, Continue action plan without enabling code		

- Press the "Next" button to acknowledge

The required enabling code is imported from the data carrier. After the action plan has been completed, the final report will be displayed.
The action plan can also be processed without importing the enabling code. The function is then not available. To activate the function, the enabling code can be brought in at a later time.

20.6. Enabling the road map following repair or retrofitting

If it is necessary to update the map data, carry out the corresponding action, see "Updating and enabling navigation system map data, updating Gracenote®*, page 118".

Repair

Repair enable codes no longer need to be ordered as replacement parts.
Over ISTA/P, during a control unit replacement ("Have control units been replaced?" - "No", exchange with or without interruption of the session), the enabling codes contained in the originally installed navigation system in the Technical Market Support are requested and reused for the new navigation system.
If the required enabling codes are unavailable online, the repair enabling codes can also be called up here from ASAP and imported manually over ISTA/P.

Retrofit

To retrofit the navigation system, the necessary enable codes must be ordered in addition to the control units. For information, see EPC.

20.7. Enabling the navigation map (road map) using ISTA

For new vehicles with the road map already loaded

For navigation systems with integrated hard disk or flash memory (e.g. CIC/Car Information Computer, CHAMP2 or HU-H/Head Unit High), the navigation maps e.g. in Europe, North America, Japan and China (for local production) are loaded ex works. Here, the enabling of map data should be carried out as part of the pre-delivery check.

21. BMW: Vehicle programming/encoding

Depending on the vehicle circuit structure, the model series can be divided as follows in terms of vehicle programming/encoding:

- "BMW: Programming routine for F-, G- and I-series, page 133",
- "BMW: Programming routine, E-Series from E36, page 148" (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93),
- "BMW: Programming routine, BMW E-Series E31, E32, E34, page 163 ".

The programming routine for the above named series is described on the following pages.

NOTE:

The correct initial and subsequent evaluation of the vehicle is the fundamental prerequisite for trouble-free vehicle programming/encoding. See “Preparation and subsequent evaluation of vehicle programming/encoding, page 17“.

Procedure in the event of programming aborts

If programming or encoding interruptions occur during a session, follow the instructions of ISTA/P. For help support and solutions for common problems, refer to the ISTA/P Version Notes.
If programming or encoding interruptions are caused by the vehicle and a solution can not be found at the retail trader, contact Technical Market Support.

22. BMW: Programming routine for F-, G- and I-series

The programming routine for the above named series is described on the following pages.

The following actions can be added to the programming procedure:

- Carry out conversion and retrofitting, see "Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes, page 55“
- Post programming initialisation, see "Post programming initialisation (service function, initialisation, adjustment), page 71“
- Immediate actions, see "Immediate actions (executing service functions without action plan / or final report), page 76“
- Carry out vehicle actions, see ""Vehicle" menu, page 42“
- Replace control units, see "Control unit replacement, page 96“
- Programming control units
- Encode control units.

Actions ("Programming", "Encoding" or "Replacing") for the control units can be selected as follows:

- Under the "Control unit tree" tab, click on the control unit
- Under the "Edit control units" tab, by direct selection of the actions, or by clicking on the control unit.

22.1. ”Programming” menu

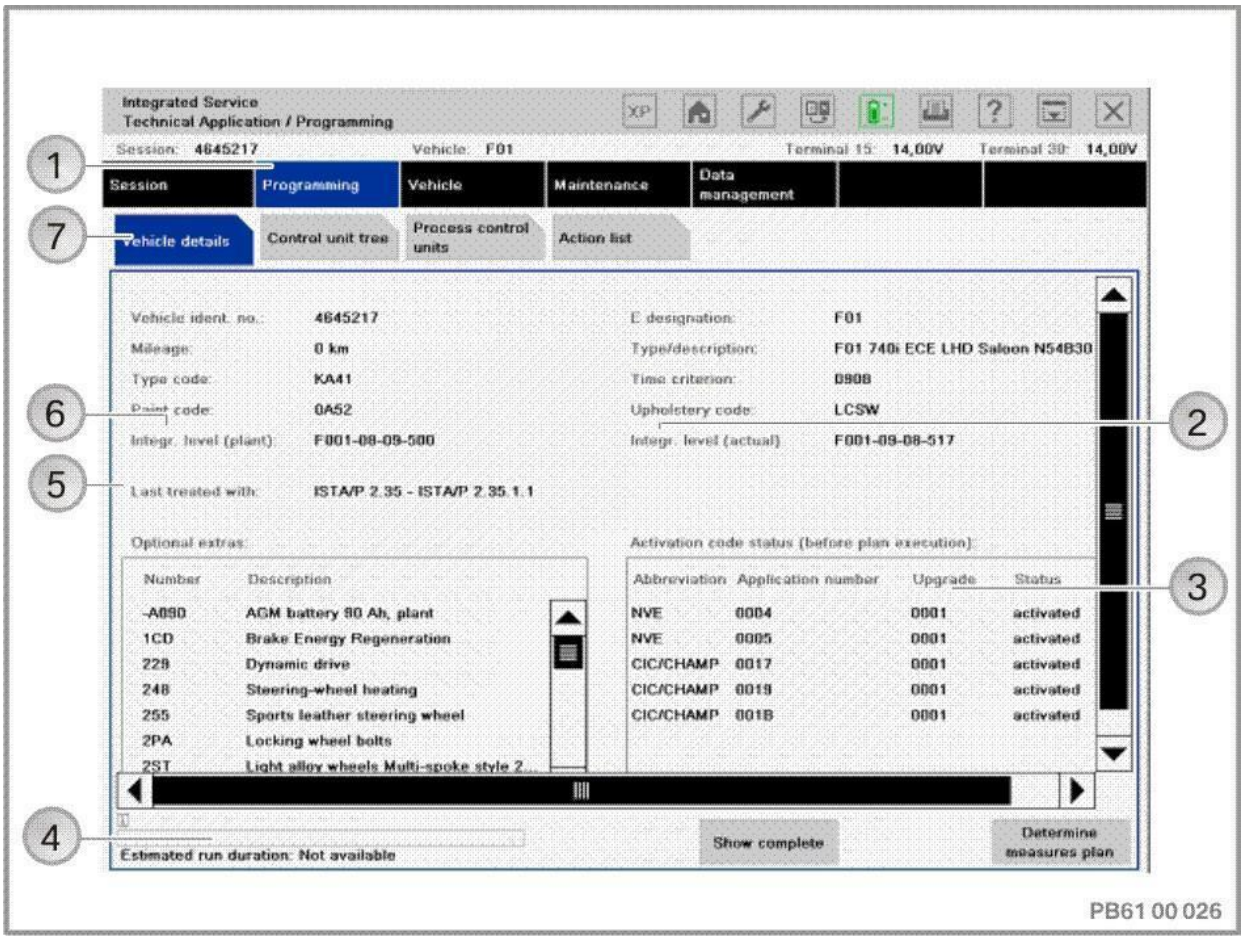
To perform vehicle programming/encoding, proceed as follows:

- Use ISTA/P to read out the vehicle data.
  See “"Session" menu (create new session), page 32“.

After a new session has been created, the dialogue box "Session preparation" is displayed.

- Query: "Have control units been replaced?"
  Select "No" button.
  Exception: See “Control unit replacement, page 96“.
- Note: "Before start of vehicle programming…", see "Preparation and subsequent evaluation of vehicle programming/encoding, page 17".
  Follow the notes. Activate checkboxes and press the "Continue" button to confirm.

After successful determination of the target context the vehicle details are displayed. The details are presented in the "Programming" menu.



Index	Screen element	Index	Screen element

1	"Programming" menu	2	Integration level (actual), current integration level of the vehicle is displayed
3	Enabling code status, Status of the used or required enabling code in the vehicle	4	Progress bar Shows the action plan determination process
5	Version last used The Progman or ISTA/P versions with which the vehicle was last treated are displayed	6	Integration level (works), displays the integration level with which the vehicle was produced
7	"Vehicle details" tab		

NOTE:

If determination of the target context does not result in any actions, the "Determine measures plan" button is disabled.

"Control Unit Tree" tab:

The control unit tree visualises the control units fitted in the vehicle according to the topology. All connected control units are displayed on each data bus. Some control units are connected to several data buses. In this case the control units on the primary programming channel are shown in white. The control units on the other data buses are shown in grey and the primary programming channel is also displayed. When the control unit has been selected, additional information is displayed. The control unit is shown with a red border on all data buses.
Combined control units are shown within a light blue area.

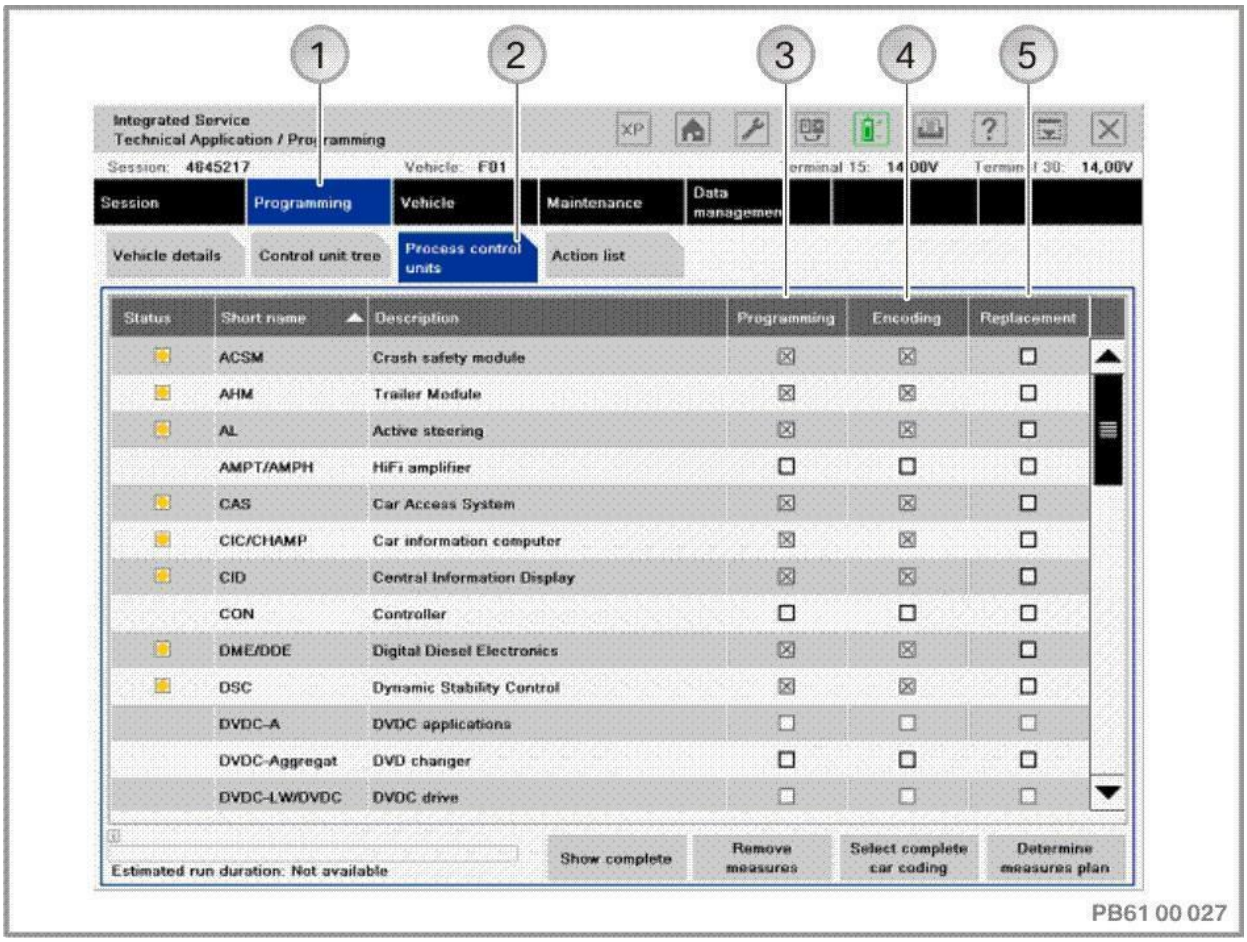
Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Control unit tree" tab
3	"Select complete car coding" button Complete car coding of the vehicle is selected	4	"Remove measures" button, measures determined in the target context are removed

NOTE:

If a KISA has been carried out on the Combox, the control unit is displayed with a note.

Actions (e.g. changing CKM values) can be performed without updating the integration level. To do this, press the "Remove measures" button to acknowledge. All measures determined based on the target context are removed. Control unit actions that are relevant for updating the integration level cannot be manually selected.

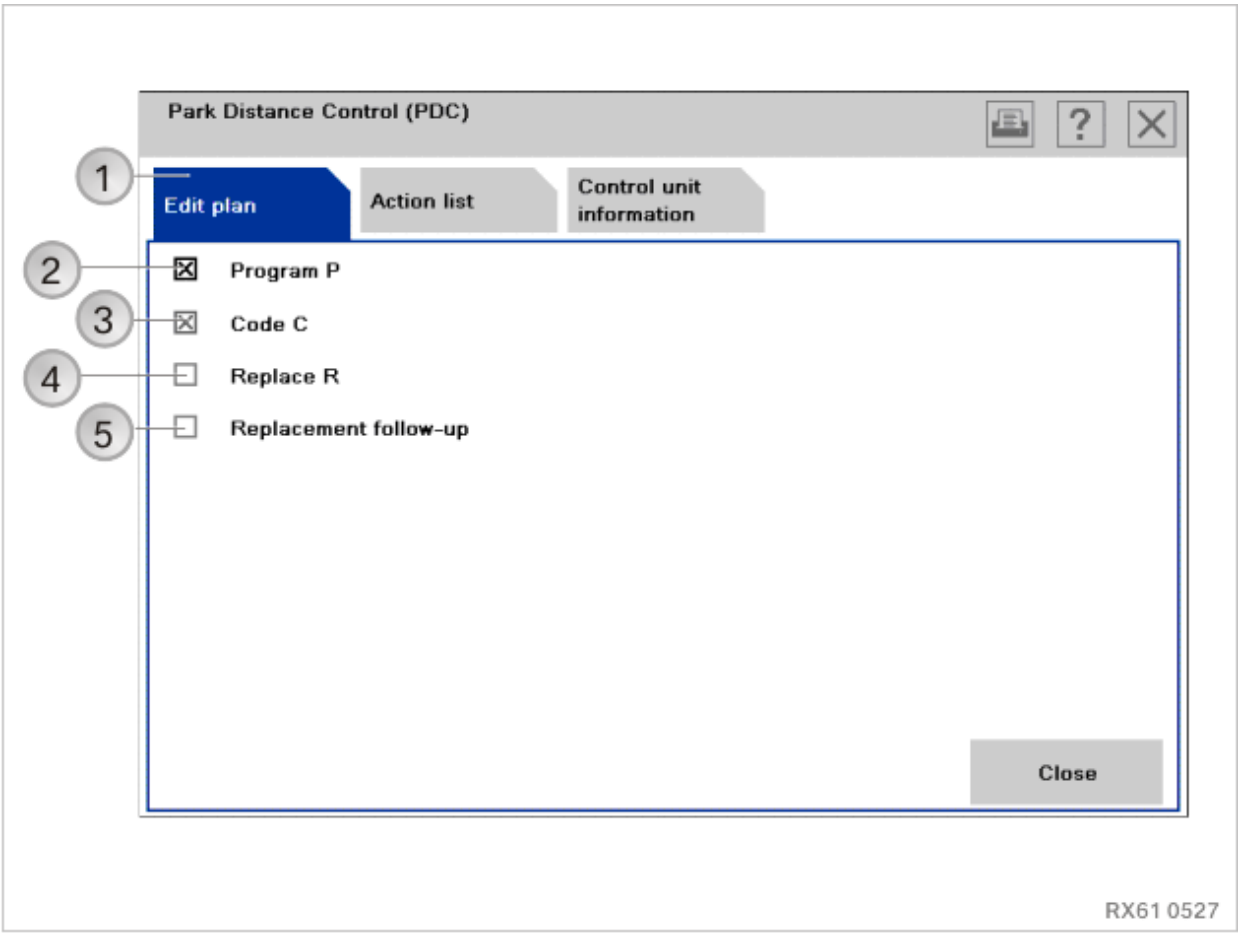
"Edit control units" tab:



Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Edit control units" tab
3	Program Program control unit	4	Encoding, Encode control unit
5	Replace Exchange (replace) control unit		

The actions available for the control units ("Programming", "Encoding" or "Replacing") can be selected directly.
If an action is added automatically by ISTA/P (e.g. encoding with selection "Replacing"), the check box is greyed out. The action can not be removed manually.
Dialogue box after clicking on the control unit in "Edit control units" or on the control unit in the "Control unit tree".

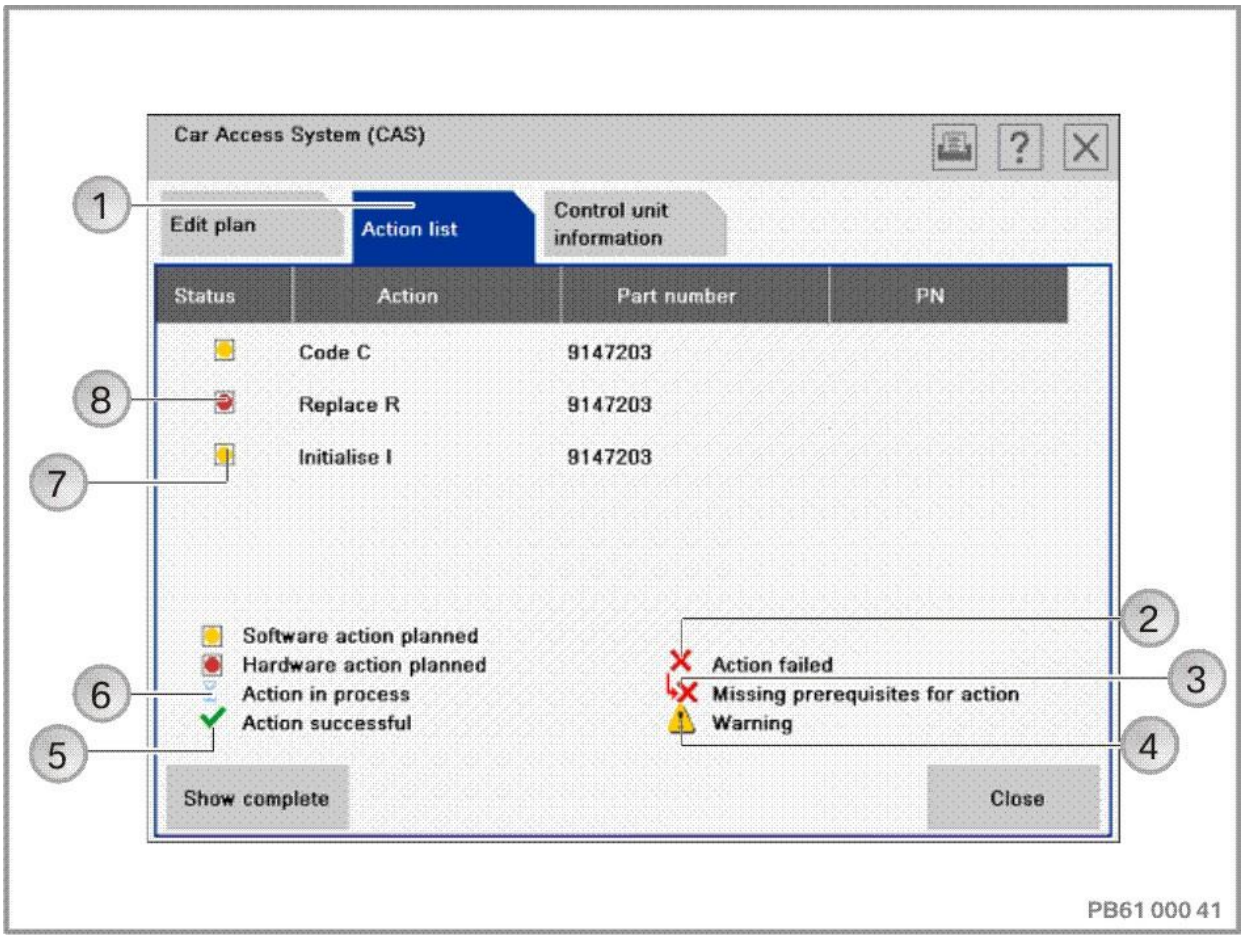
After selection of control unit, "Edit plan" tab:



Index	Screen element	Index	Screen element
1	"Edit plan" tab	2	Program Program control unit
3	Encoding, Encode control unit	4	Replace Exchange (replace) control unit
5	Replacement follow-up Follow-up already exchanged (replaced) control unit		

The available actions for a control unit are individual. They can differ from one control unit to the next depending on which actions are defined.

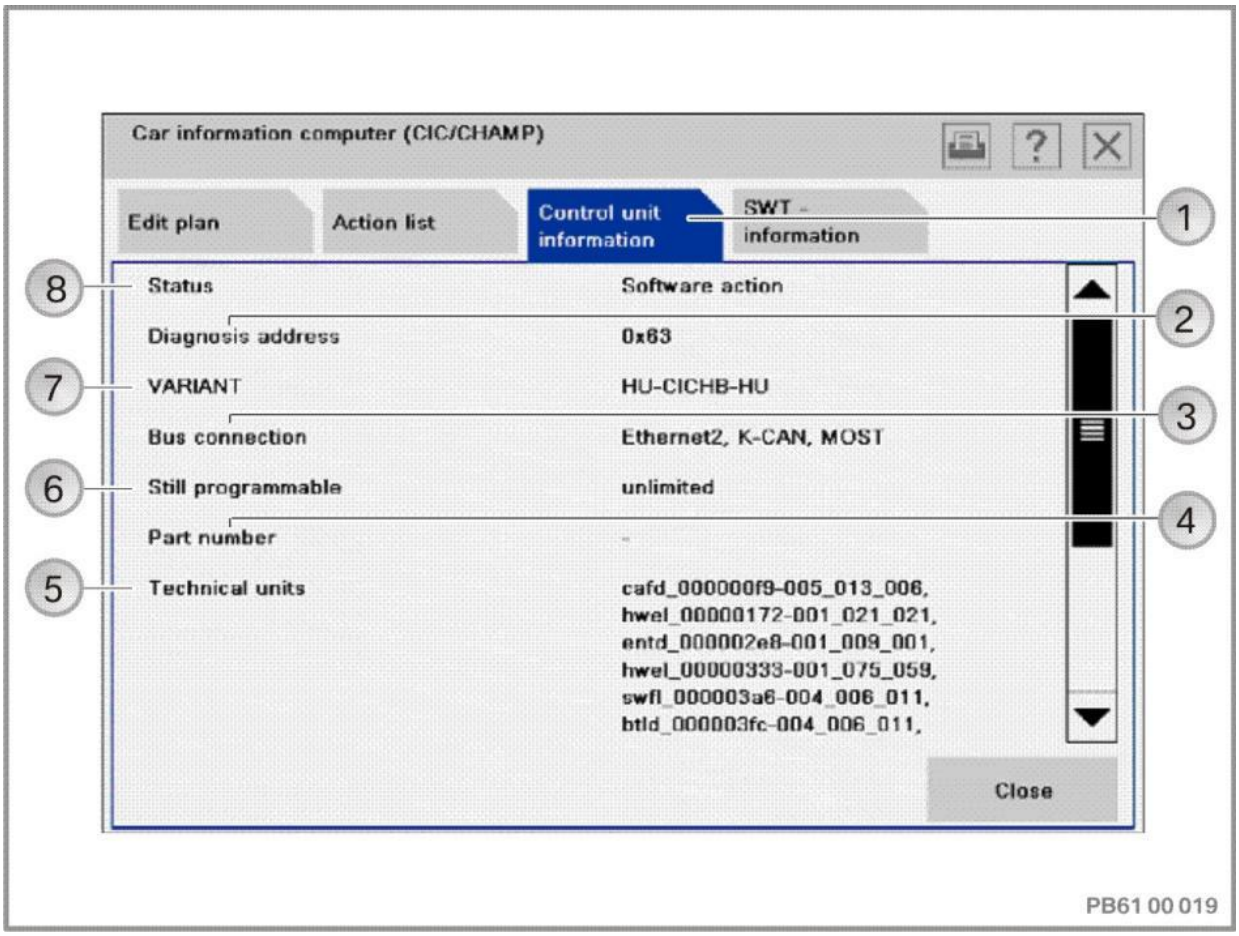
Section after selection of control unit, "Action list" tab:



Index	Screen element	Index	Screen element
1	"Action list" tab	2	"Action unsuccessful" symbol
3	"Missing prerequisites for action" symbol	4	"Warning" symbol
5	"Action successful" symbol	6	"Action being executed" symbol
7	"Software action planned" symbol (e.g. encoding)	8	"Hardware action planned" symbol (e.g. control unit replacement)

When the "Action list" tab is selected, the planned actions are displayed with their respective status.

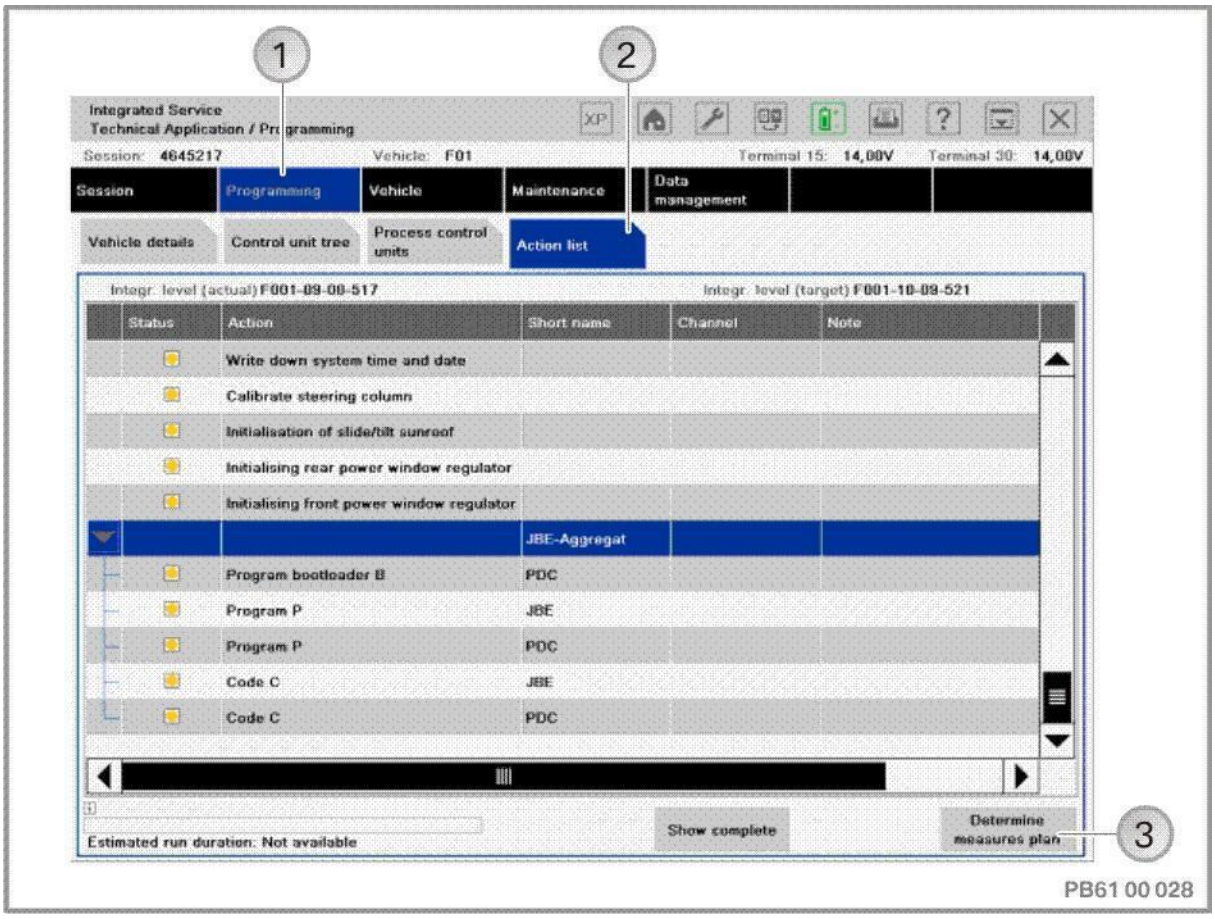
Section after selection of control unit, "Control unit information" tab:



Index	Screen element	Index	Screen element
1	"Control unit information" tab	2	Diagnosis address of the control unit
3	Bus system to which the control unit is connected	4	Part number of control unit
5	Technical units, software version in control unit	6	Still programmable Displays how often the control unit can still be programmed
7	Version Version of the control unit	8	Status, scheduled action

When the "control unit information" tab is selected, the information on the selected control unit is displayed.

"Action List" tab:



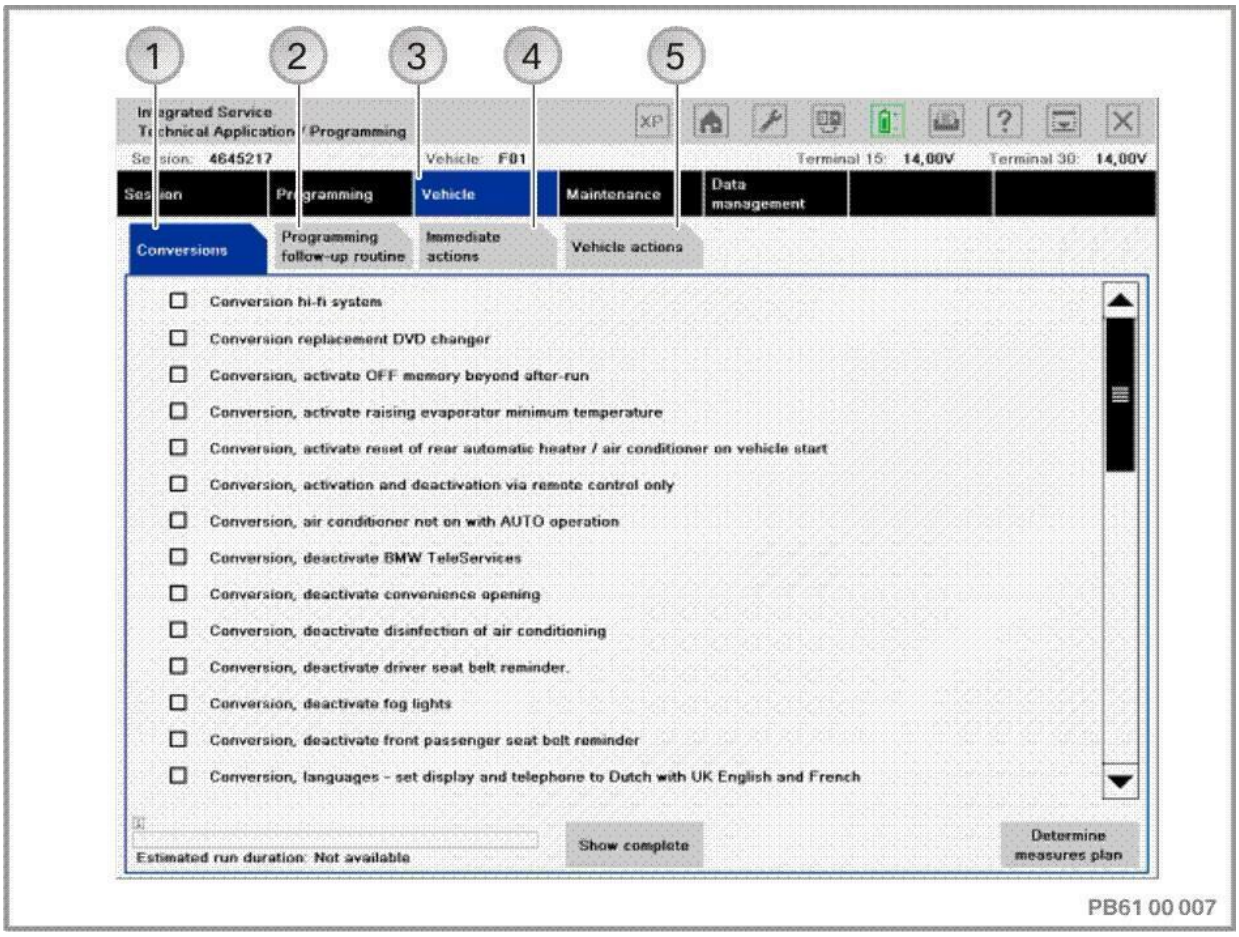
Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Action list" tab
3	"Determine action plan" button		

The "Action list" is a tabular summary of the planned actions. The actions are also displayed in the "Action plan". Information on the control units can also be displayed (e.g. control unit no longer programmable).

22.2. "Vehicle" menu:

By switching to the "Vehicle" menu, the following actions can be added to the programming procedure:

- Carry out conversion and retrofitting, see "Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes, page 55“
- Post programming initialisation, see "Post programming initialisation (service function, initialisation, adjustment), page 71“
- Immediate actions, see "Immediate actions (executing service functions without action plan / or final report), page 76“
- Adjust CKM values, see "Car & Key Memory (CKM), page 67“
- Vehicle actions (e.g. HDD update*, see "Updating and enabling navigation system map data, updating Gracenote® page 118").



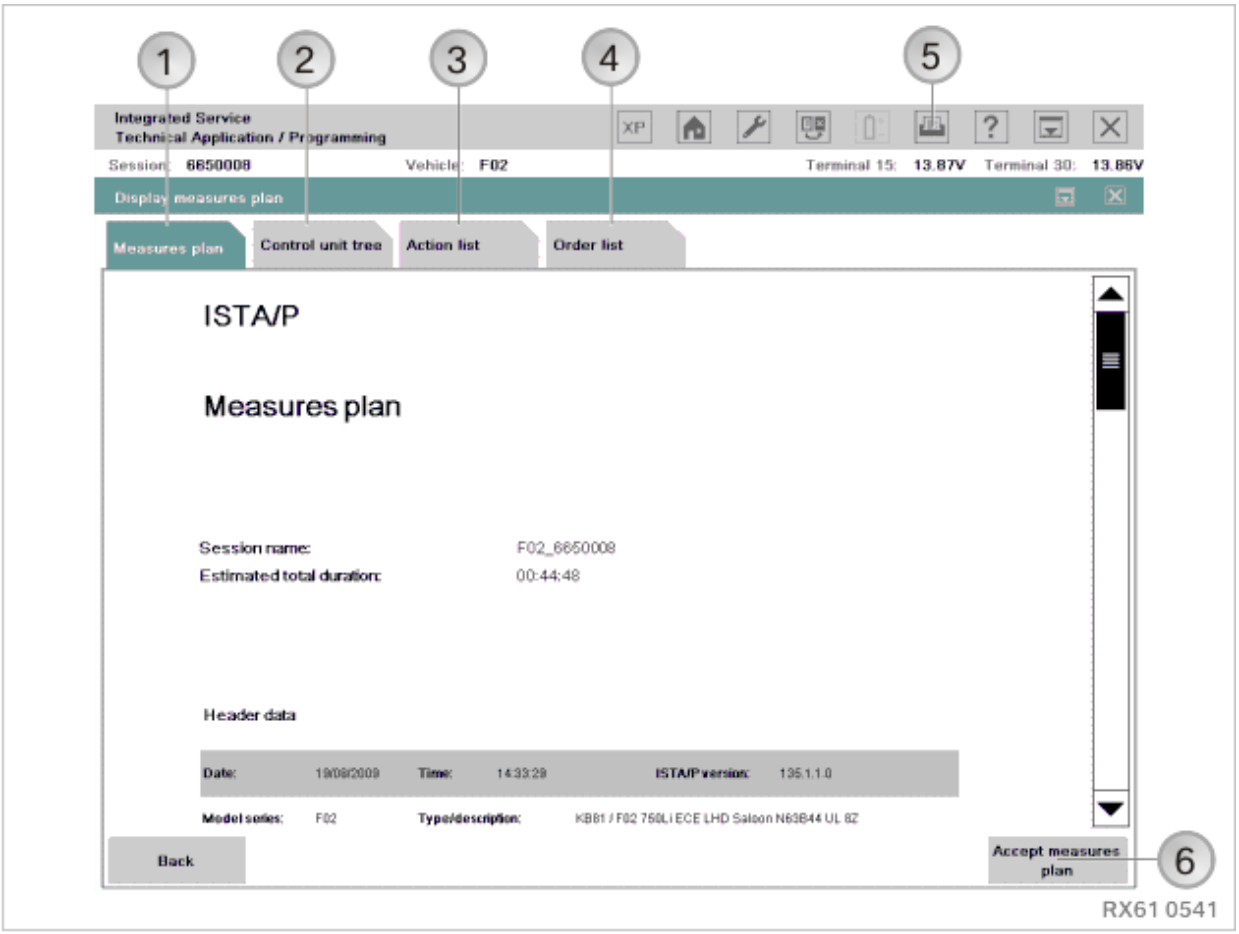
Index	Screen element	Index	Screen element
1	"Conversions" tab available conversions and retrofits are displayed	2	"Post programming initialisation" tab • Available service functions are displayed • Read/delete fault memory
3	"Vehicle" menu	4	"Immediate Actions" tab, e.g. • Write down system time and date • Delete transport mode • Set transport mode • Display/delete fault memory
5	"Vehicle actions" tab: • Update of navigation system map data (HDD update)* • Enable map data for navigation system* • Update Gracenote®* • Import vehicle order • Select complete car coding		

To select further actions (programming, encoding), switch back to the "Programming" menu.

22.3. Determine measures plan

User action	Result
Press the "Determine action plan" button to acknowledge.	The action plan is determined and displayed in the "Display action plan" menu. The following tabs are displayed: "Action plan" "Control unit tree" "Action list" "Order list" (only in the event of control unit replacement) "Enabling code list“ (only if FSC used). The action plan is displayed in the menu window. Control units that are to be treated are marked with a yellow symbol. A red symbol indicates replacement or installation of a control unit. If no symbol is displayed, no actions are scheduled for the control unit. The actions are displayed as follows: **P** Program **B** Program bootloader **C** Encode **U** Removal **M** Installation **R** Replace **I** Initialise **A** Activate **D** Deactivate **H** Updating of navigation system map data (HDD update)*.
Select "Action plan" tab.	The action plan is displayed in the print preview.

Action plan in print preview:



Index	Screen element	Index	Screen element
1	"Action plan" tab, of the action plan is displayed	2	"Control unit tree" tab, The control unit tree with the scheduled actions is displayed
3	"Action list" tab, The scheduled actions are displayed in the form of a table	4	"Order list" tab Control units to be replaced are displayed with order numbers
5	"Print" button, The action plan is printed	6	"Accept action plan" tab, Runs the action plan and programs the vehicle

If enabling codes are used, the "Enabling code list" is also displayed. All enabling codes used are displayed here.

The measures plan comprises actions that have been determined as necessary to eliminate a defective vehicle condition. Apart from the actions determined, the vehicle details, session name and ISTA/P version used are also displayed.

Runs the action plan and programs the vehicle

NOTE:

During the processing of the action plan, manual user actions may be required at a few places, especially

- before the beginning of vehicle programming/encoding of the individual control units (refer to information in chapter "Preparation and subsequent evaluation of vehicle programming/encoding, page 17")
- When programming the CAS, observe the notes for the service function before execution, etc.

The beginning of the vehicle programming/encoding should be monitored, in order to respond to any possible pop-ups displayed in the near field. The started vehicle programming/encoding can be recognised by the progress bar (control unit tree) or display in percent (action list) of the individual control units.

User action	Result
Check action plan for completeness and correctness. Print out action plan. Press the "Accept action plan" button to acknowledge.	If applicable, the "Instructions before beginning the action plan" dialogue box will be displayed.

Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The action plan is executed. • The dialogue box "Important notes before starting to carry out the service functions" is possibly displayed. • The "Required post programming initialisation“ dialogue box may be displayed. • The "Important information before beginning the initialisations" dialogue box may be displayed. • The "Conversion instructions" dialogue box may be displayed, see "Control unit replacement, page 96“. • The "Existing fault code entries" dialogue box may be displayed. • The dialogue box "Important notes after completion of measures plan execution" is possibly displayed.
Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The "Session follow-up work" dialogue box may be displayed.
Follow notes and note if necessary. Press the "OK" button to acknowledge.	The final report is displayed in the menu "Action plan execution complete". The following tabs are displayed: • "Final report" • "Control unit tree" • "Action list".
Check final report for completeness and faults. Follow instructions. Print out final report. Confirm "End session" button.	Programming is ended ISTA/P switches to the Session menu.

23. BMW: Programming routine, E-Series from E36

(E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93)

The programming routine for the above named series is described on the following pages.
The following actions can be added to the programming procedure:

- Carry out conversion and retrofitting, see "Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes, page 55“
- Set CKM values (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E83, E85, E86), see "Car & Key Memory (CKM), page 67"
- Post programming initialisation, see "Post programming initialisation (service function, initialisation, adjustment), page 71“
- Immediate actions, see "Immediate actions (executing service functions without action plan / or final report), page 76“
- Carry out vehicle actions, see ""Vehicle" menu, page 42“
- Replace control units, see "Control unit replacement, page 96“
- Programming control units
- Encode control units.

Actions for the control units can be selected as follows:

- Under the "Control unit tree" tab, click on the control unit
- Under the "Edit control units" tab, by direct selection of the actions, or by clicking on the control unit.

23.1. ”Programming” menu

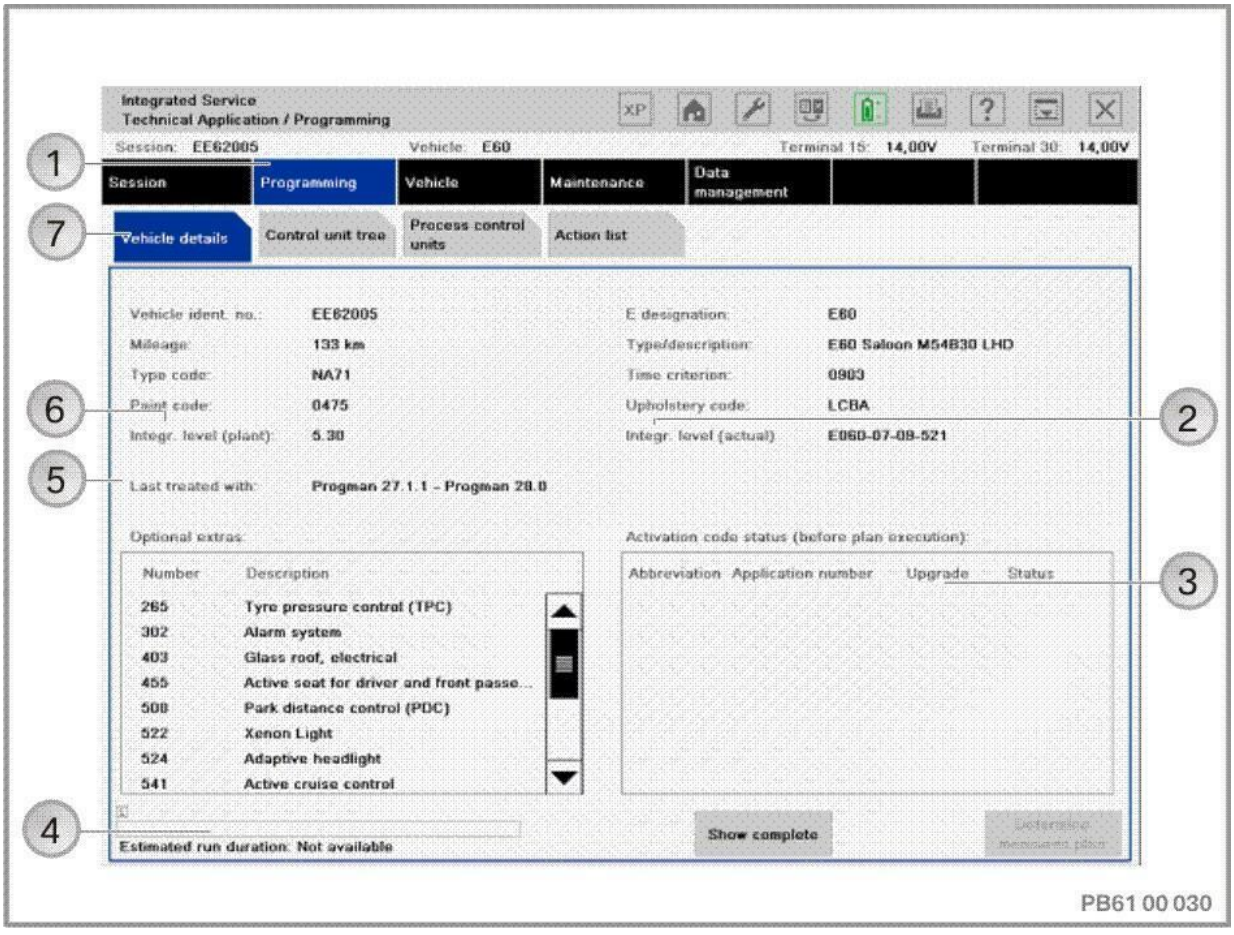
To perform vehicle programming/encoding, proceed as follows:

- Use ISTA/P to read out the vehicle data.
  See “"Session" menu (create new session), page 32“.

After a new session has been created, the dialogue box "Session preparation" is displayed.

- Query: "Have control units been replaced?"
  Select "No" button.
  Exception: See “Control unit replacement, page 96“.
- Note: "Before start of vehicle programming…", see "Preparation and subsequent evaluation of vehicle programming/encoding, page 17".
  Follow the notes. Activate checkboxes and press the "Continue" button to confirm.

After successful determination of the target context the vehicle details are displayed. The details are presented in the "Programming" menu.



Index	Screen element	Index	Screen element

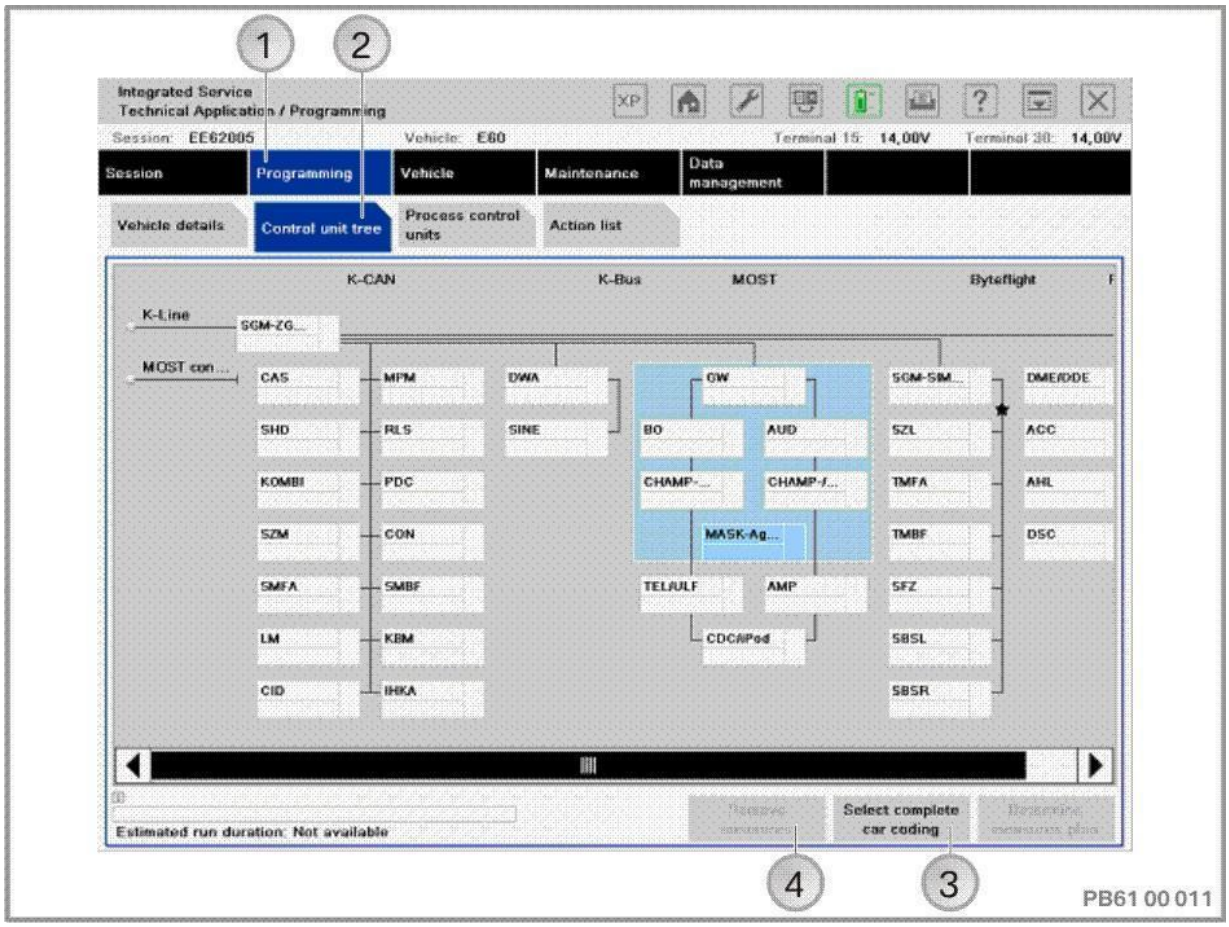
1	"Programming" menu	2	Integration level (actual), current integration level of the vehicle is displayed
3	Enabling code status, Status of the used or required enabling code in the vehicle	4	Progress bar Shows the action plan determination process
5	Version last used The Progman or ISTA/P versions with which the vehicle was last treated are displayed	6	Integration level (works), displays the integration level with which the vehicle was produced
7	"Vehicle details" tab		

NOTE:

If determination of the target context does not result in any actions, the "Determine measures plan" button is disabled.

"Control Unit Tree" tab:

The control unit tree visualises the control units fitted in the vehicle according to the topology. All connected control units are displayed on each data bus. Some control units are connected to several data buses. In this case the control units on the primary programming channel are shown in white. The control units on the other data buses are shown in grey and the primary programming channel is also displayed. When the control unit has been selected, additional information is displayed. The control unit is shown with a red border on all data buses.
Combined control units are shown within a light blue area.



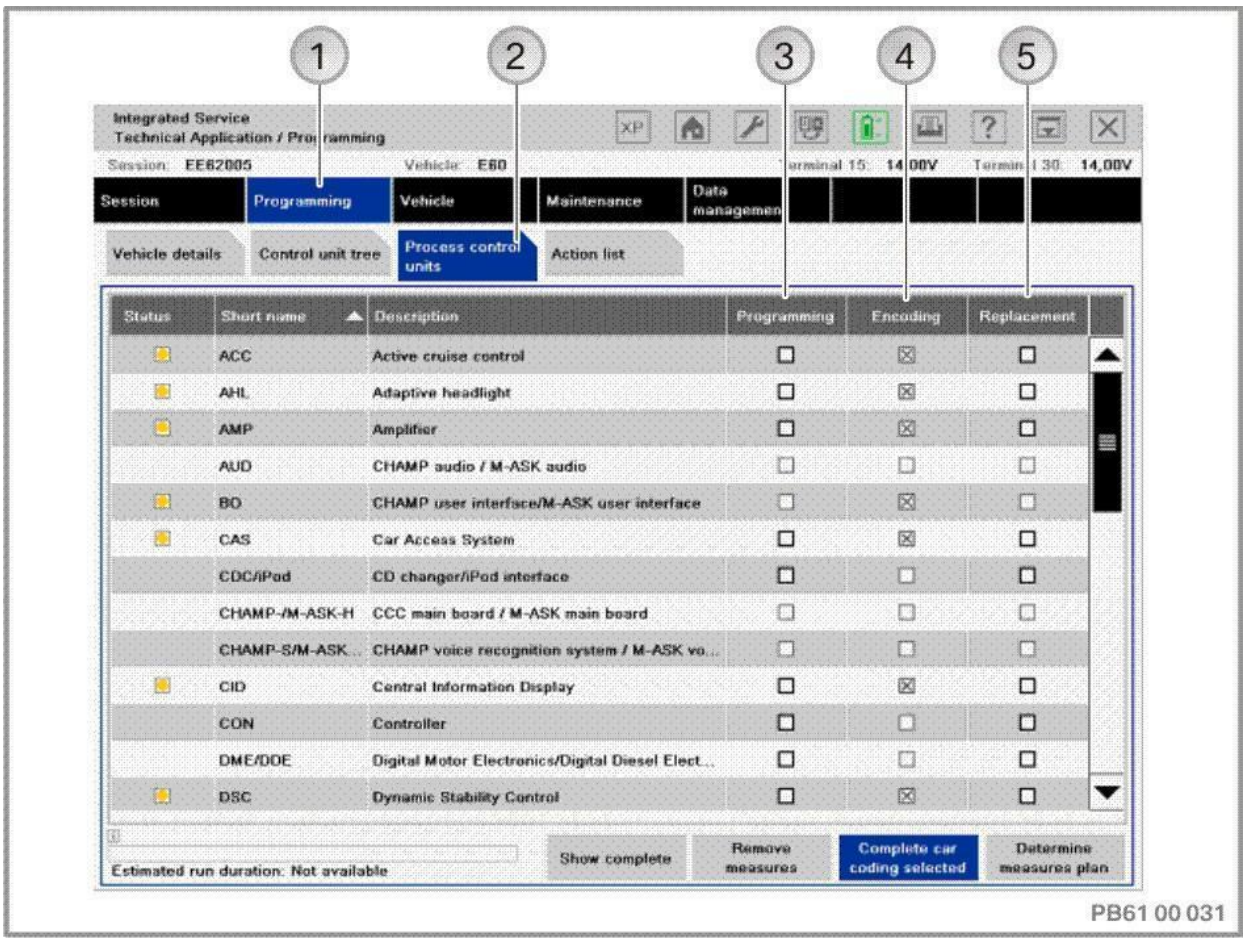
Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Control unit tree" tab
3	"Select complete car coding" button Complete car coding of the vehicle is selected	4	"Remove measures" button, measures determined in the target context are removed

NOTE:

If a KISA has been carried out on the Combox, the control unit is displayed with a note.

Actions (e.g. changing CKM values) can be performed without updating the integration level. To do this, press the "Remove measures" button to acknowledge. All measures determined based on the target context are removed. Control unit actions that are relevant for updating the integration level cannot be manually selected.

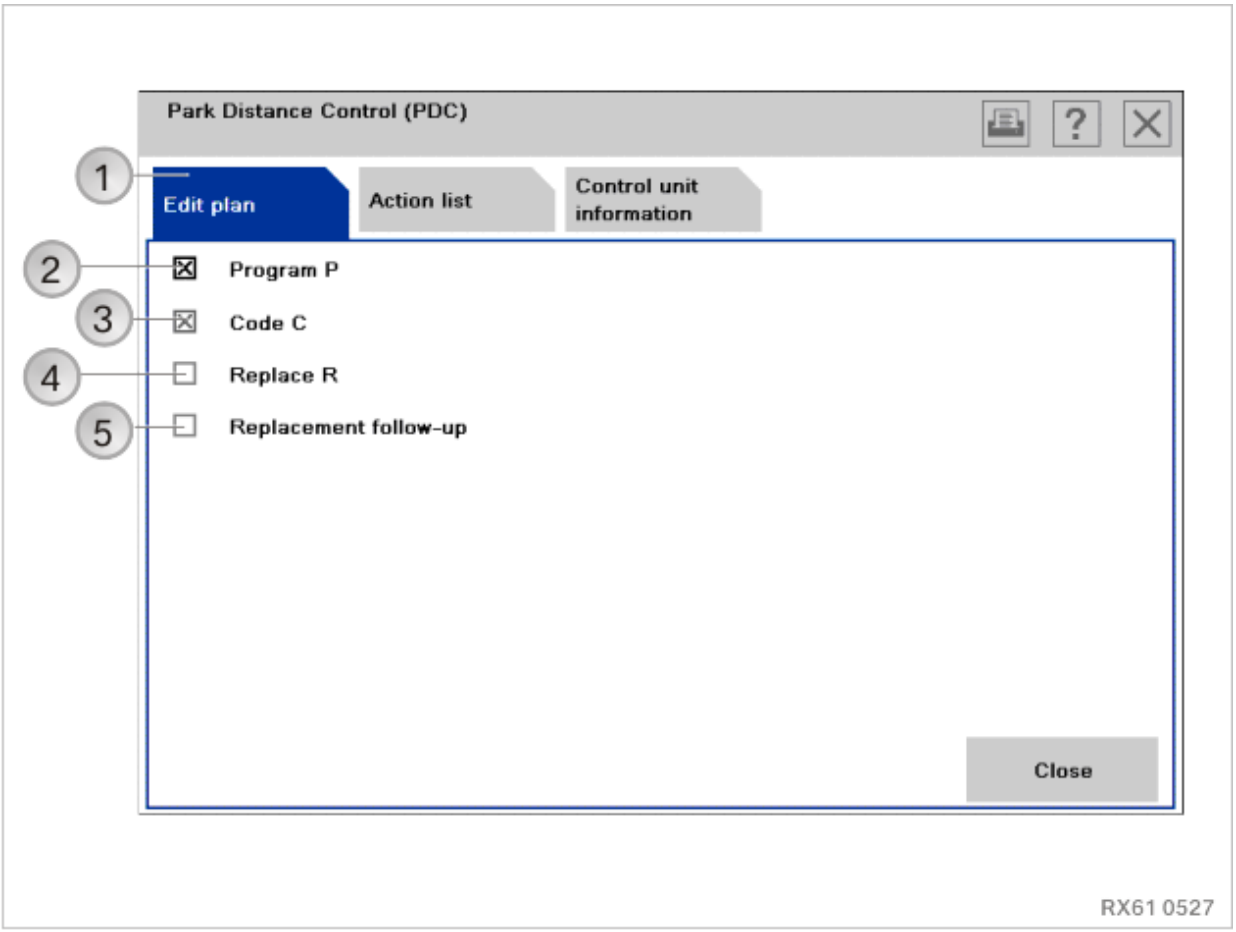
23.2. "Edit control units" tab:



Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Edit control units" tab
3	Program Program control unit	4	Encoding, Encode control unit
5	Replace Exchange (replace) control unit		

The actions available for the control units ("Programming", "Encoding" or "Replacing") can be selected directly.
If an action is added automatically by ISTA/P (e.g. encoding with selection "Replacing"), the check box is greyed out. The action can not be removed manually.
Dialogue box after clicking on the control unit in "Edit control units" or on the control unit in the "Control unit tree".

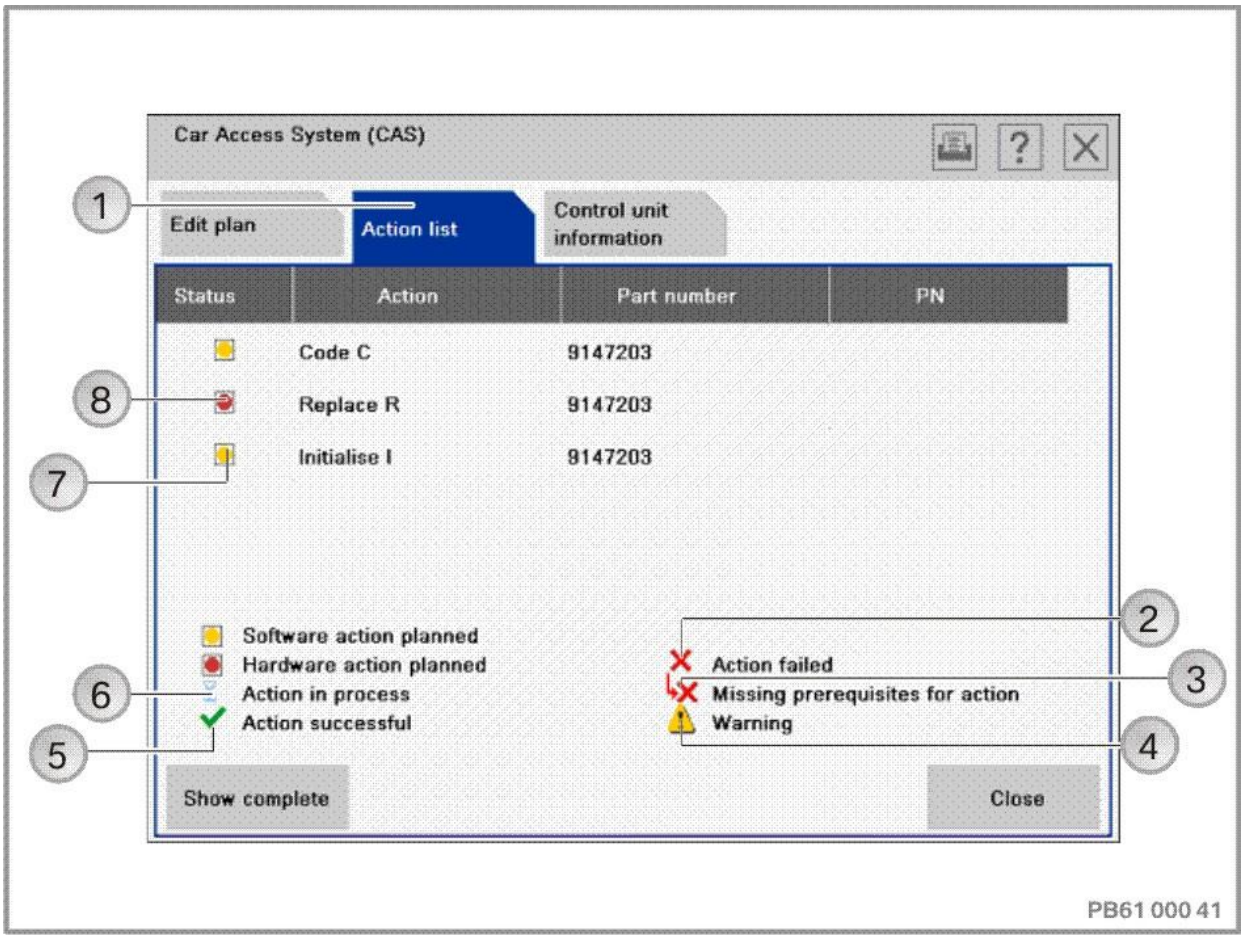
After selection of control unit, "Edit plan" tab:



Index	Screen element	Index	Screen element
1	"Edit plan" tab	2	Program Program control unit
3	Encoding, Encode control unit	4	Replace Exchange (replace) control unit
5	Replacement follow-up Follow-up already exchanged (replaced) control unit		

The available actions for a control unit are individual. They can differ from one control unit to the next depending on which actions are defined.

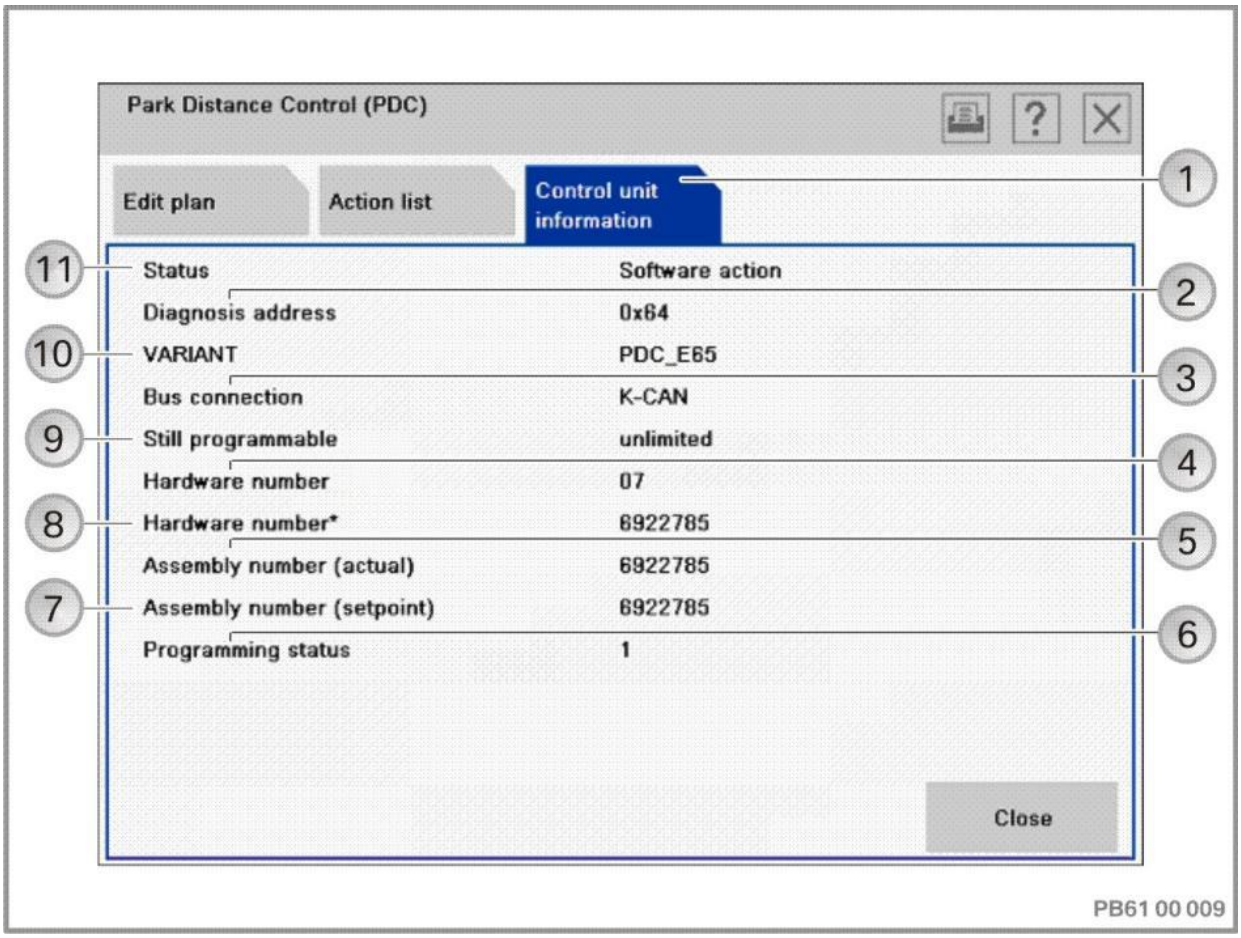
Section after selection of control unit, "Action list" tab:



Index	Screen element	Index	Screen element
1	"Action list" tab	2	"Action unsuccessful" symbol
3	"Missing prerequisites for action" symbol	4	"Warning" symbol
5	"Action successful" symbol	6	"Action being executed" symbol
7	"Software action planned" symbol (e.g. encoding)	8	"Hardware action planned" symbol (e.g. control unit replacement)

When the "Action list" tab is selected, the planned actions are displayed with their respective status.

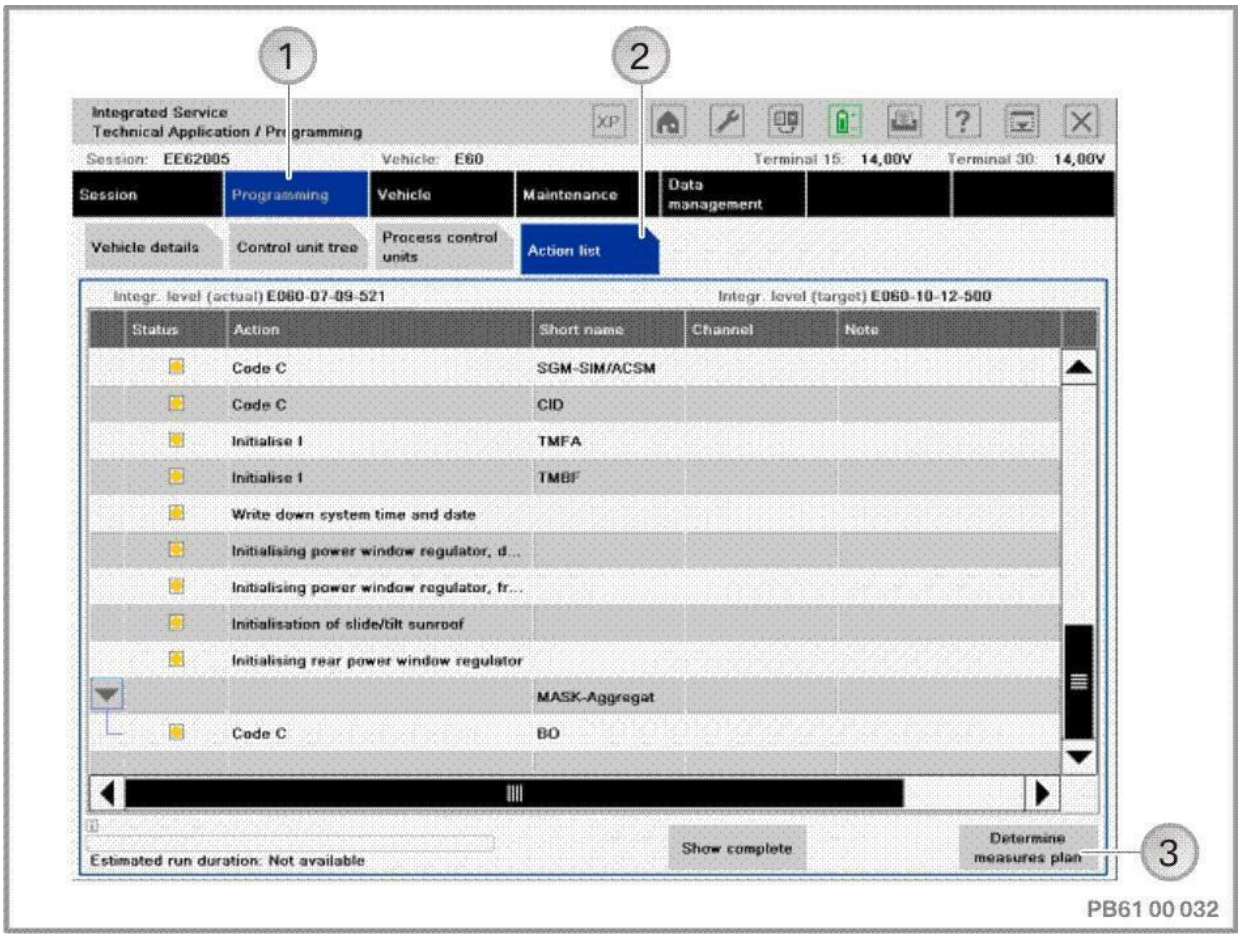
Section after selection of control unit, "Control unit information" tab:



Index	Screen element	Index	Screen element
1	"Control unit information" tab	2	Diagnosis address of the control unit
3	Bus system to which the control unit is connected	4	Hardware number
5	Assembly number (actual)	6	Programming status Display of detailed information
7	Assembly number (setpoint)	8	Hardware number*, hardware with program status
9	Still programmable Displays how often the control unit can still be programmed	10	Version Version of the control unit
11	Status, scheduled action		

When the "control unit information" tab is selected, the information on the selected control unit is displayed.

"Action List" tab:



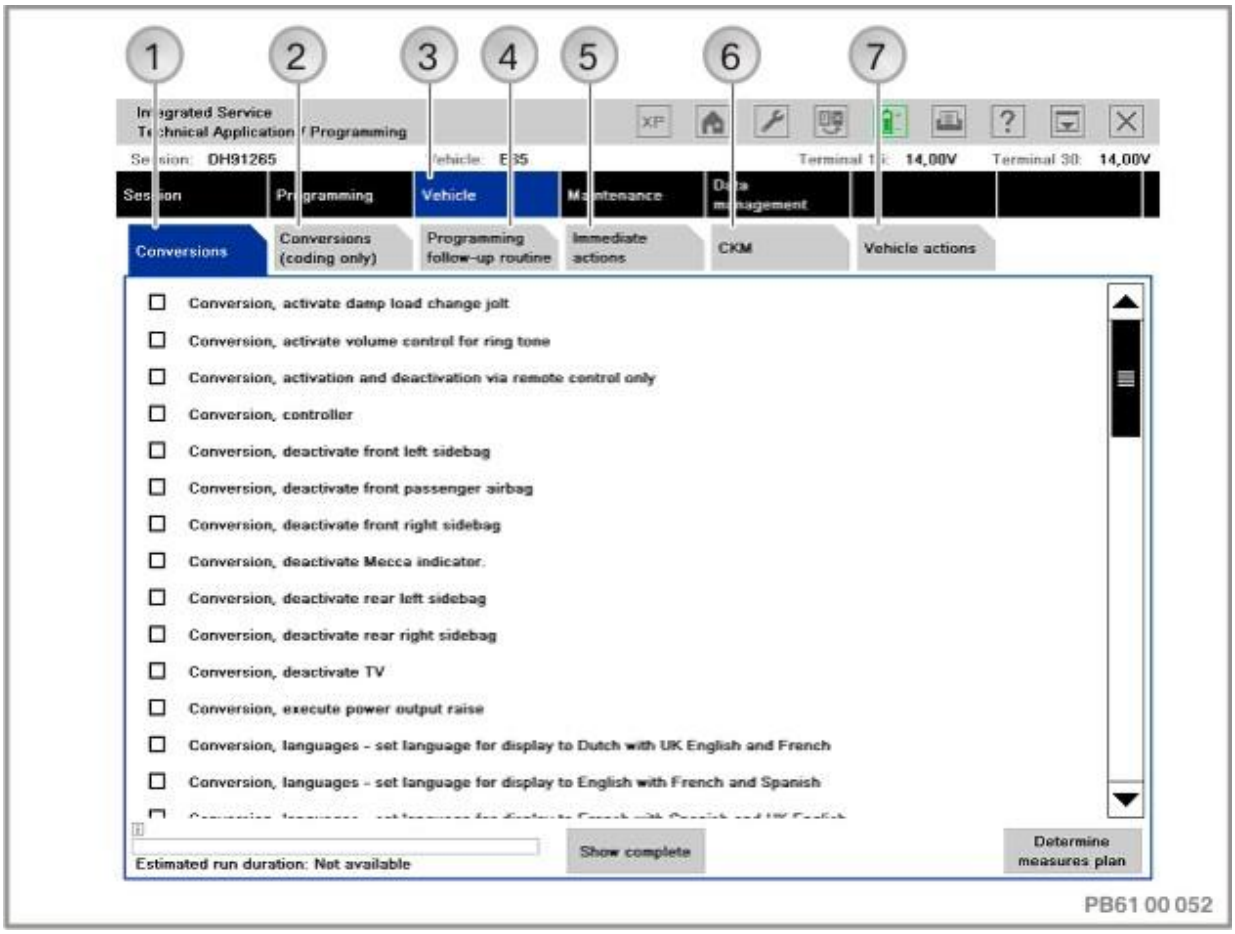
Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Action list" tab
3	"Determine action plan" button		

The "Action list" is a tabular summary of the planned actions. The actions are also displayed in the "Action plan". Information on the control units can also be displayed (e.g. control unit no longer programmable).

23.3. "Vehicle" menu

By switching to the "Vehicle" menu, the following actions can be added to the programming procedure:

- Carry out conversion and retrofitting, see "Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes, page 55“
- Post programming initialisation, see "Post programming initialisation (service function, initialisation, adjustment), page 71“
- Immediate actions, see "Immediate actions (executing service functions without action plan / or final report), page 76“
- Adjust CKM values, see "Car & Key Memory (CKM), page 67“
- Vehicle actions (e.g. HDD update*, see "Updating and enabling navigation system map data, updating Gracenote®, page 118").



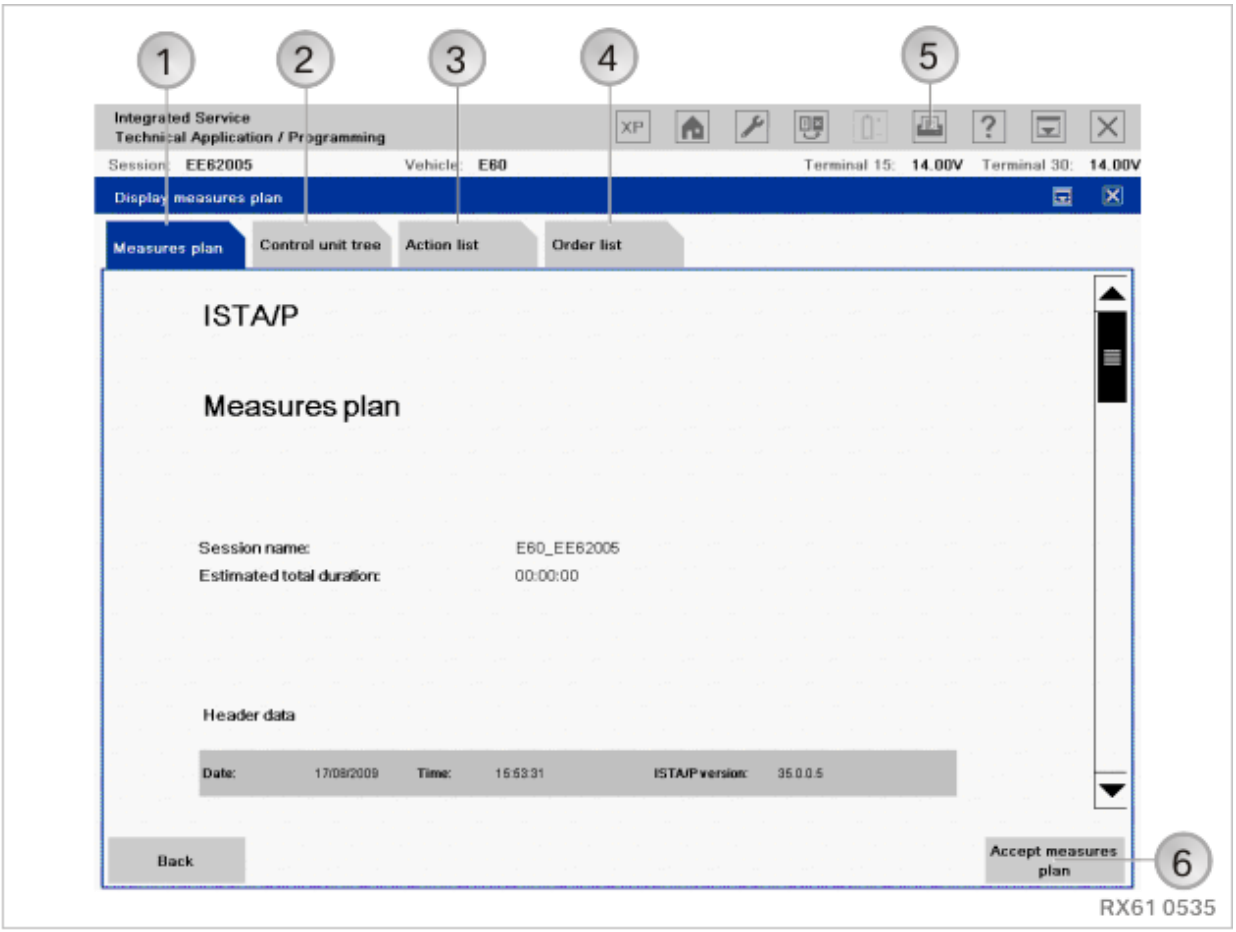
Index	Screen element	Index	Screen element
1	"Conversions" tab available conversions and retrofits are displayed	2	"Conversions (coding only)" tab (for vehicles with vehicle electrical system 2000 only). Available conversions and retrofittings are displayed (no update of the integration level)
3	"Vehicle" menu	4	"Post programming initialisation" tab • Available service functions are displayed • Read/delete fault memory
5	"Immediate Actions" tab, e.g. • Write down system time and date • Delete transport mode • Set transport mode • Display/delete fault memory	6	"CKM" tab
7	"Vehicle actions" tab: • Update of navigation system map data (HDD update)* • Enable map data for navigation system* • Update Gracenote®* • Import vehicle order • Select complete car coding		

To select further actions (programming, encoding), switch back to the "Programming" menu.

Determine measures plan

User action	Result
Press the "Determine action plan" button to acknowledge.	The action plan is determined and displayed in the "Display action plan" menu. The following tabs are displayed: • "Action plan" • "Control unit tree" • "Action list" • "Order list" (only in the event of control unit replacement) • "Enabling code list“ (only if FSC used). The action plan is displayed in the menu window. Control units that are to be treated are marked with a yellow symbol. A red symbol indicates replacement or installation of a control unit. If no symbol is displayed, no actions are scheduled for the control unit. The actions are displayed as follows: **P** Program **B** Program bootloader **C** Encode **U** Removal **M** Installation **R** Replace **I** Initialise **A** Activate **D** Deactivate **H** Updating of navigation system map data (HDD update)*.
Select "Action plan" tab.	The action plan is displayed in the print preview.

Action plan in print preview:



Index	Screen element	Index	Screen element
1	"Action plan" tab, of the action plan is displayed	2	"Control unit tree" tab, The control unit tree with the scheduled actions is displayed
3	"Action list" tab, The scheduled actions are displayed in the form of a table	4	"Order list" tab Control units to be replaced are displayed with order numbers
5	"Print" button, The action plan is printed	6	"Accept action plan" tab, Runs the action plan and programs the vehicle

If enabling codes are used, the "Enabling code list" is also displayed. All enabling codes used are displayed here.

The measures plan comprises actions that have been determined as necessary to eliminate a defective vehicle condition. Apart from the actions determined, the vehicle details, session name and ISTA/P version used are also displayed.

Runs the action plan and programs the vehicle

NOTE:

During the processing of the action plan, manual user actions may be required at a few places, especially

- before the beginning of vehicle programming/encoding of the individual control units (refer to information in chapter "Preparation and subsequent evaluation of vehicle programming/encoding, page 17")
- When programming the CAS, observe the notes for the service function before execution, etc.

The beginning of the vehicle programming/encoding should be monitored, in order to respond to any possible pop-ups displayed in the near field. The started vehicle programming/encoding can be recognised by the progress bar (control unit tree) or display in percent (action list) of the individual control units.

User action	Result
Check action plan for completeness and correctness. Print out action plan. Press the "Accept action plan" button to acknowledge.	If applicable, the "Instructions before beginning the action plan" dialogue box will be displayed.
Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The action plan is executed. • The dialogue box "Important notes before starting to carry out the service functions" is possibly displayed. • The "Required post programming initialisation“ dialogue box may be displayed. • The "Important information before beginning the initialisations" dialogue box may be displayed.

	• The "Conversion instructions" dialogue box may be displayed, see "Control unit replacement, page 96". • The "Fault memory" dialogue box may be displayed. • The dialogue box "Important notes after completion of measures plan execution" is possibly displayed.
Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The "Session follow-up work" dialogue box may be displayed.
Follow notes and note if necessary. Press the "OK" button to acknowledge.	The final report is displayed in the menu "Action plan execution complete". The following tabs are displayed: • "Final report" • "Control unit tree" • "Action list".
Check final report for completeness and faults. Follow instructions. Print out final report. Confirm "End session" button.	Programming is ended. ISTA/P switches to Session menu.

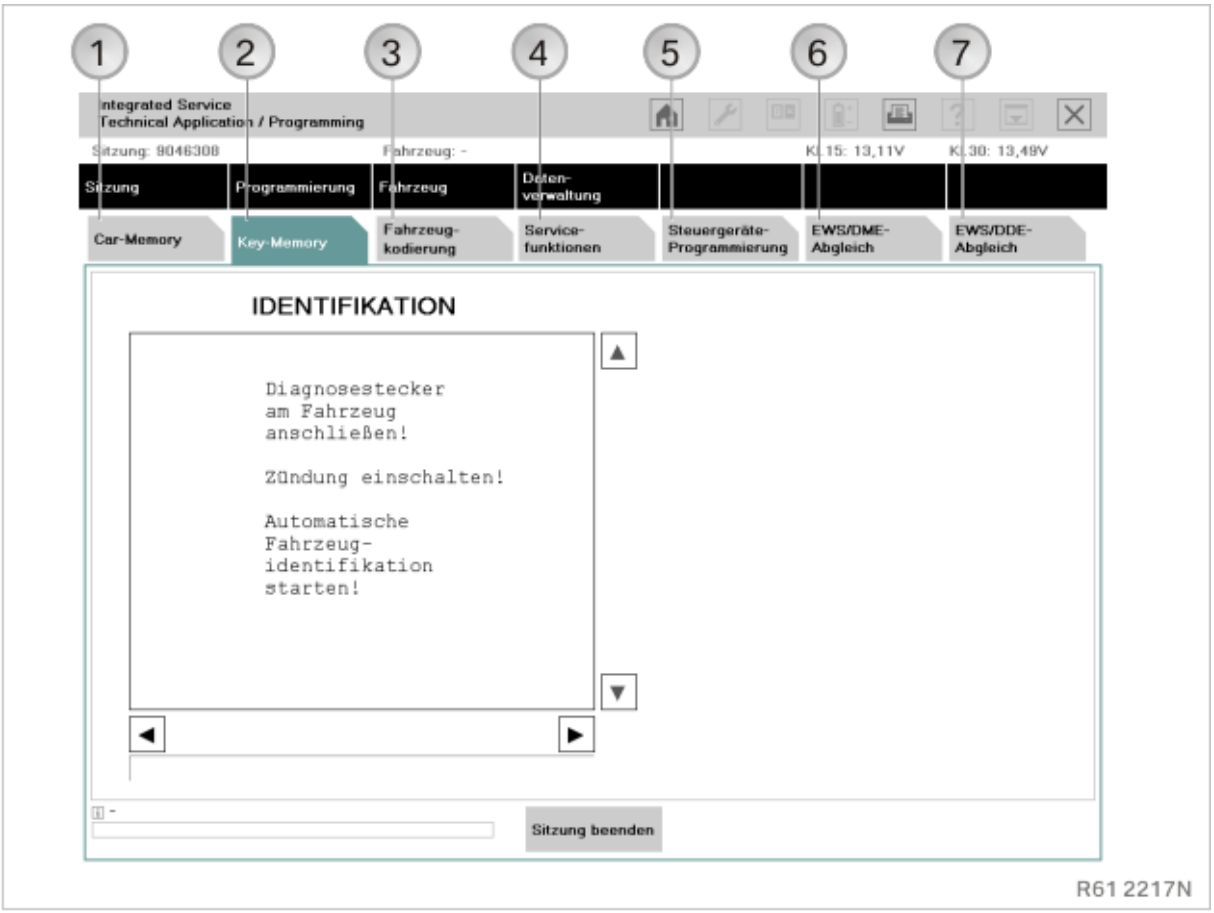
24. BMW: Programming routine, BMW E-Series E31, E32, E34*

The "Control unit coding" (SGC) application for vehicle programming/encoding the series E31, E32, E34has been integrated in the ISTA/P.

To perform vehicle programming/encoding, proceed as follows:

- Use ISTA/P to read out the vehicle data.
  See "'Session" menu (create new session), page 32.

After vehicle identification, ISTA/P switches to the "SGC capsule" view.



Index	Screen element	Index	Screen element
1	"Car Memory" tab, Setting the Car Memory values	2	"Key Memory" tab, Setting of the key memory values
3	"Vehicle coding" tab, Encoding the control units	4	"Service function" tab, Display of the service functions (e.g. "Program radio")

5	"Control unit programming" tab, service measures Replacement of control units or EPROM, deleting adaptation values	6	"EWS/DME adjustment" tab, EWS and DME control units are synchronised
7	"EWS/DDE adjustment" tab, EWS and DME control units are synchronised		

During vehicle programming/encoding of series that are programmed/encoded via the control unit coding programming, only the access changes, not the process. For this reason, a detailed description of the vehicle programming/encoding process will not be given here.

24.1. Programming abort of programmable drive control units (E31, E32, E34, ,)

Proceed as follows if programming always aborts at the same point:

- Disconnect the drive control unit for about one minute
- Reconnect the drive control unit
- Switch on ignition.
- Repeat programming
- Switch off ignition.

24.2. Programming abort by the instrument cluster (E31, E32, E34, ,)

In isolated cases, the instrument panel can interrupt communication on the diagnostic cable during programming. In such cases, repeat programming with the instrument panel disconnected. Before EWS adjustment (immobiliser), the instrument panel must be reconnected.

24.3. Faults on the diagnostic cable (E31, E32, E34, ,)

With the following engine control units, it may be the case that no programming can be performed again after a programming abort:

- ME7.2, M5.2, M5.2.1 in the engine M62
- M5.2.1 in the engine M73

After trying again, the fault message:
"Programming not carried out error-free - repeat programming". Diagnosis is not possible here. Switch the ignition off and back on again. You can now repeat programming.

24.4. Display of fault messages (E31, E32, E34)

The text display of fault messages appears on the display screen. The relevant fault code can be called up by pressing the information button at the bottom right of the display screen.

24.5. Contact Technical Support

Consult Technical Support if

- Programming aborts repeatedly occur

- Programming is not possible.

In such cases, keep the following ready to hand:

- Action plan
- Final Report
- Diagnosis printout of the control units concerned
- Full fault message
- Version of ISTA/P used.

24.6. Recoding (E31, E32, E34)

All control units relevant to encoding must be encoded without fail after installation. If this encoding is not carried out after fitting, malfunctions could occur. At most 30 seconds are required to encode a control unit.
Proceed as follows:

- Connect the BMW programming system to the vehicle.
- Switch on ignition.
- Select model series in ISTA/P
- Select "Encoding ZCS/FA"
- Select model series
- Select "1 - Recoding“
- Select system (e.g. "Airbag")
- Confirm the question "Start automatic encoding" by pressing "Y"

NOTE:

Encoding cannot be interrupted once the user has confirmed automatic encoding with ”Y”.

- Comply with user prompting.
- After encoding, delete the fault memory via the vehicle test in the ISTA workshop system.

25. BMW: Programming BMW navigation systems

25.1. Programming using ISTA/P

The navigation systems of the E60, E61, E63, E64, E70, E71, E72 E81, E82, E84, E87, E88, E89, E90, E91, E92, E93 series, as well as of the F- and G-series, are programmed exclusively with the ISTA/P programming system, and not the "BMW Navigation" CD.
For more information see chapter(s):

- "BMW: Vehicle programming/encoding, page 132",
- "Updating and enabling navigation system map data, updating Gracenote®*, page 118".

25.2. CD "BMW Navigation"

Procedure as follows:

The CD contains all software versions of "BMW Navigation" for the series E38, E39, E46, E52, E53, E65, E66, E83, E85and E86.
When a new navigation computer is installed in a vehicle with a radio navigation system (SA 606), a particular procedure must be observed. See repair instructions "Note for handling navigation computers".

NOTE:

The basic requirement for programming is that the vehicle is correctly prepared. Refer to information in chapter "Preparation and subsequent evaluation of vehicle programming/encoding" for programming and encoding the navigation systems.

User action	Result
Insert CD in the navigation system CD drive.	
	It will take about 15 minutes to load the software.
	The CD drive automatically opens.
Remove the CD from the drive.	
Confirm end of programming.	

NOTE:

The navigation computer must not be cut off from the voltage supply for as long as the LED on the computer remains on. There is otherwise a risk of incorrect data being written to the memory. Trouble-free functioning of the computer would then be no longer guaranteed.

NOTE:

During the programming procedure, the control display, on-board computer, or central information display screen may flicker.

NOTE:

If the current software version is already programmed, the CD will be ejected again immediately.

Exception :E38, E39, E46, E52, E53, E83, E85 and E86 with navigation system (SA 609)

For vehicles with production date beginning September 2001, or for all vehicles with split-screen software, use the latest "BMW Navigation" CD:

Version 1

The navigation computer Mk3 with navigation system (SA 609) has operating software V17 or earlier installed. The current operating software with the "Split-screen software" package (at an extra charge) should be retrofitted:

- Follow the installation instructions in the cover of the operating software CD
- Insert current navigation system operating software CD.
- The installation will start automatically.
- When the installation is complete, the CD will automatically be ejected. The installation can take up to seven minutes
- Remove the CD
- Press the rotary push-button to restart the navigation computer (please refer to the instructions displayed on the on-board monitor).
- The instruction "Insert V17 or Key CD" appears in the display of the on-board computer
- Insert the Key CD
- When the installation is complete, the Key CD will automatically be ejected. The installation can take about two minutes
- Remove the Key CD
- Following this, the navigation computer is automatically restarted.

Version 2

In case of complaint, the navigation computer Mk3/Mk4 should be replaced in a vehicle with navigation system (SA 609). A new navigation computer Mk3/Mk4 with the current operating software should be installed:

- Read out the software version
- Install new navigation computer in vehicle. See Electronic Parts Catalogue (EPC)
- Follow the installation instructions in the cover of the operating software CD
- Insert current navigation system operating software CD.
- The installation will start automatically.
- When the installation is complete, the CD will automatically be ejected. The installation can take up to seven minutes.
- Remove the CD
- Press the rotary push-button to restart the navigation computer (please refer to the instructions displayed on the on-board monitor).
- Encode the navigation computer (see BMW ISTA workshop systems)
- The navigation computer must go into rest state. To do this, switch the ignition off. After a minute, the "Mains voltage LED" at the navigation computer goes out.

NOTE:

For vehicles with production date before September 2001 and Mk3 navigation computer without split-screen software, use the CD "BMW Navigation V17.1.".

Exception :E53, E60, E61, E63, E64, E65, E66, E70, E71, E72, E81, E82, E83, E85, E86, E87, E90, E91, E92 , and E93 with navigation system JNAV (LA 807 and SA 609)

For vehicles manufactured before 28.02.2007, first carry out the programming of the JNAV control unit with the original software before 03/07. To do this, update the control unit software to status 03/07 with the PCMCIA card. Then program the vehicle with ISTA/P (the JNAV control unit is no longer listed in the action plan!) and perform complete car coding.

26. BMW: Installation locations of OBD diagnostics socket and MOST

26.1. Connection options for BMW series

Use of ICOM

All BMW model series can be processed with the ICOM A, B and C modules.
For graphics, information and connection sequence: See "ICOM (Integrated Communication Optical Module), page 12".
The following overview shows which ICOM interfaces are approved for vehicle programming/encoding on which model series:

Model series	Vehicle interface (connection via OBD diagnostic socket)		MOST capability (multi-channel programming)
	ICOM A and C	ICOM A	ICOM A and B (Only possible if the MOST direct access port is available)
F-, G- and I-series	-	X	-
E90, E91, E92, E93	-	X	X
E89	-	X	X
E81, E82, E87, E88	-	X	X
E85, E86	-	X	-
E84	-	X	X
E83	-	X	-
E70, E71, E72	-	X	X
E65, E66	-	X	X
E60, E61, E63, E64	-	X	X
E52, E53	-	X	-
E36, E38, E39, E46	X	X	-
E31, E32, E34	X	X	-

NOTE:

On the series E81, E82, E84, E87, E88, E90, E91, E92, E93, there is only a MOST port if the following equipment is installed:

- BMW Professional radio (RAD2)
- Multiaudio system controller (MASK) = BMW Business navigation system
- Car Communication Computer (CCC) = BMW Professional navigation system
- Car Information Computer Basic (CIC Basic) = BMW Business navigation system
- Car Information Computer (CIC) = BMW Professional navigation system

26.2. Installation locations of OBD diagnostic socket:

F-, G- and I-series

In the driver's footwell, near the A-pillar.

E90, E91, E92, E93

In driver's footwell, on A-pillar.

E89

Left-hand drive vehicles: In driver's footwell on left, under a cover on the underside of the dashboard.
Right-hand drive vehicles: In driver's footwell on right, under a cover on the underside of the dashboard.

E81, E82, E87, E88

In driver's footwell, on A-pillar.

E85, E86

In the driver's footwell, near the A-pillar.

E84

In the driver's footwell, near the A-pillar.

E83

In driver's footwell, on A-pillar.

E70, E71, E72

In the driver's footwell, near the A-pillar.

E65, E66

In driver's footwell, on A-pillar.

E63, E64

In the driver's footwell, near the A-pillar.

E60, E61

In driver's footwell, on A-pillar.

NOTE:

The installation locations of the earlier series are not listed.

IMPORTANT!

Pins that have been pushed back or have expanded in the OBD diagnostic socket can cause communication faults between the programming system and the vehicle. Before connecting an ICOM, check the contacts in the OBD diagnostic socket.

NOTE:

After performing diagnosis or vehicle programming/encoding, the OBD diagnostic socket must be sealed with the sealing cap.

26.3. Installation location of MOST direct access port (when available):

E90, E91, E92, E93

In left footwell.

E89

With driver's door open, behind a trim panel on the instrument panel, in vicinity of A-pillar.

E81, E82, E87, E88

In left footwell.

E84

In left footwell.

E70, E71, E72

In passenger footwell in vicinity of footwell ventilation.

E65, E66

In glove compartment.

E63, E64

In glove compartment.

E60, E61

Left-hand drive vehicles: On left next to the glove compartment.
Right-hand drive vehicles: On right next to the glove compartment.

IMPORTANT!

The MOST port can only be pulled out by approx. two to three cm. Risk of damaging optical fibres.

NOTE:

To program/encode vehicles with MOST direct access port, the connection between the ICOM and the vehicle must be set up using the MOST.

NOTE:

Check that the MOST direct access port is correctly installed following any repair work in the front passenger footwell (e.g. control unit replacement).

NOTE:

Close off or reconnect the MOST direct access port after use (protective cap, bridge).

27. MINI: Vehicle programming/encoding

The following pages contain descriptions of the vehicle programming/encoding for the MINI series.
For more information see chapter "MINI: Programming routine, page 177.

NOTE:

The correct initial and subsequent evaluation of the vehicle is the fundamental prerequisite for trouble-free vehicle programming/encoding. See “Preparation and subsequent evaluation of vehicle programming/encoding, page 17“.

Procedure in the event of programming aborts

If programming or encoding interruptions occur during a session, follow the instructions of ISTA/P. For help support and solutions for common problems, refer to the ISTA/P Version Notes.
If programming or encoding interruptions are caused by the vehicle and a solution can not be found at the retail trader, contact Technical Market Support.

28. MINI: Programming routine

The following actions can be added to the programming procedure:

- Carry out conversion and retrofitting, see "Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes, page 55“
- Set CKM values (R50, R52, R53), see "Car & Key Memory (CKM), page 67"
- Post programming initialisation, see "Post programming initialisation (service function, initialisation, adjustment), page 71“
- Immediate actions, see "Immediate actions (executing service functions without action plan / or final report), page 76“
- Carry out vehicle actions, see ""Vehicle" menu, page 42“
- Replace control units, see Control unit replacement, page 96“
- Programming control units
- Encode control units.

Actions for the control units can be selected as follows:

- Under the "Control unit tree" tab, click on the control unit
- Under the "Edit control units" tab, by direct selection of the actions, or by clicking on the control unit.

28.1. ”Programming” menu

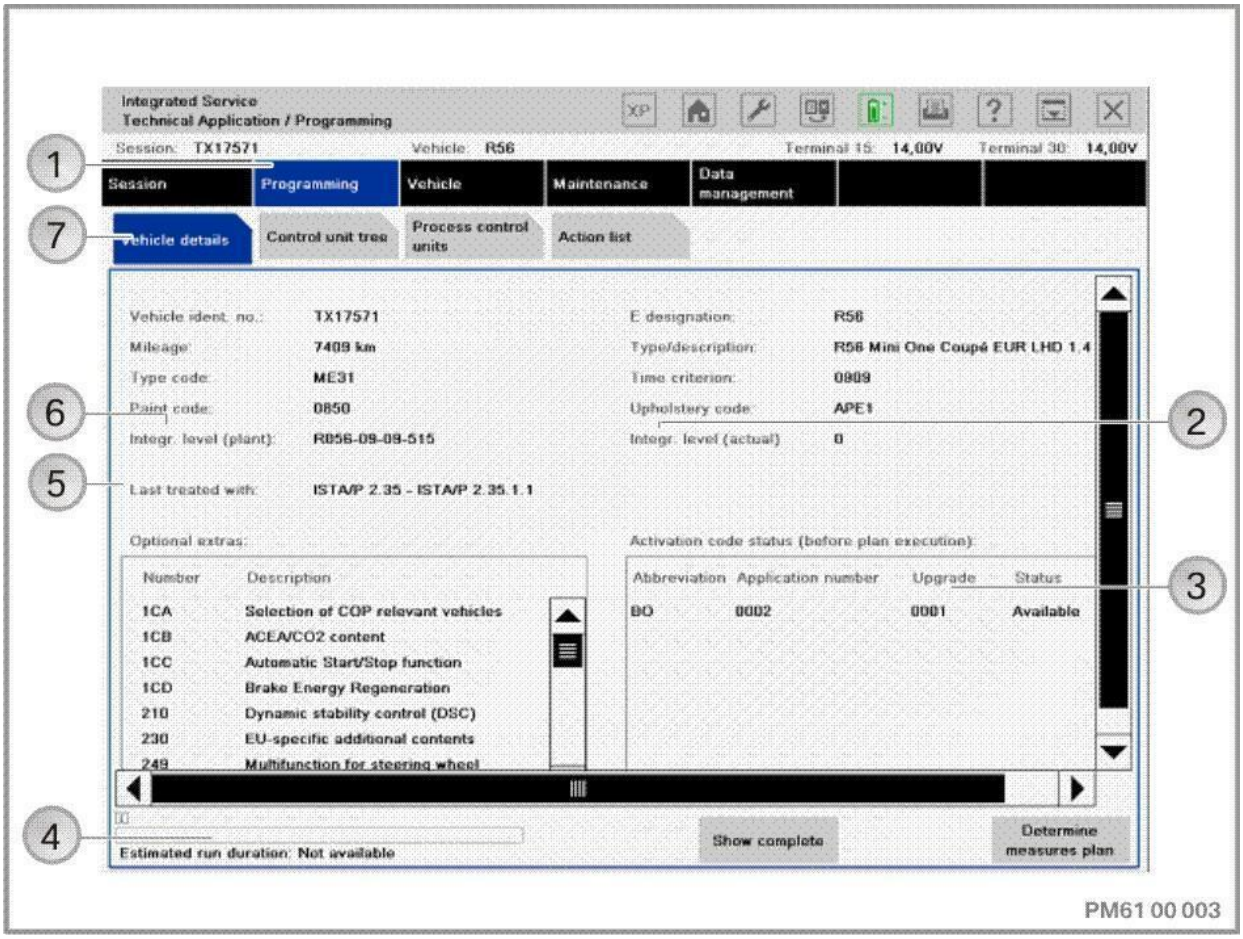
To perform vehicle programming/encoding, proceed as follows:

- Use ISTA/P to read out the vehicle data.
  See “"Session" menu (create new session), page 32“.

After a new session has been created, the dialogue box "Session preparation" is displayed.

- Query: "Have control units been replaced?"
  Select "No" button.
  Exception: See “Control unit replacement, page 96“.
- Note: "Before start of vehicle programming…", see "Preparation and subsequent evaluation of vehicle programming/encoding, page 17".
  Follow the notes. Activate checkboxes and press the "Continue" button to confirm.

After successful determination of the target context the vehicle details are displayed. The details are presented in the "Programming" menu.



Index	Screen element	Index	Screen element

1	"Programming" menu	2	Integration level (actual), current integration level of the vehicle is displayed
3	Enabling code status, Status of the used or required enabling code in the vehicle	4	Progress bar Shows the action plan determination process
5	Version last used The Progman or ISTA/P versions with which the vehicle was last treated are displayed	6	Integration level (works), displays the integration level with which the vehicle was produced
7	"Vehicle details" tab		

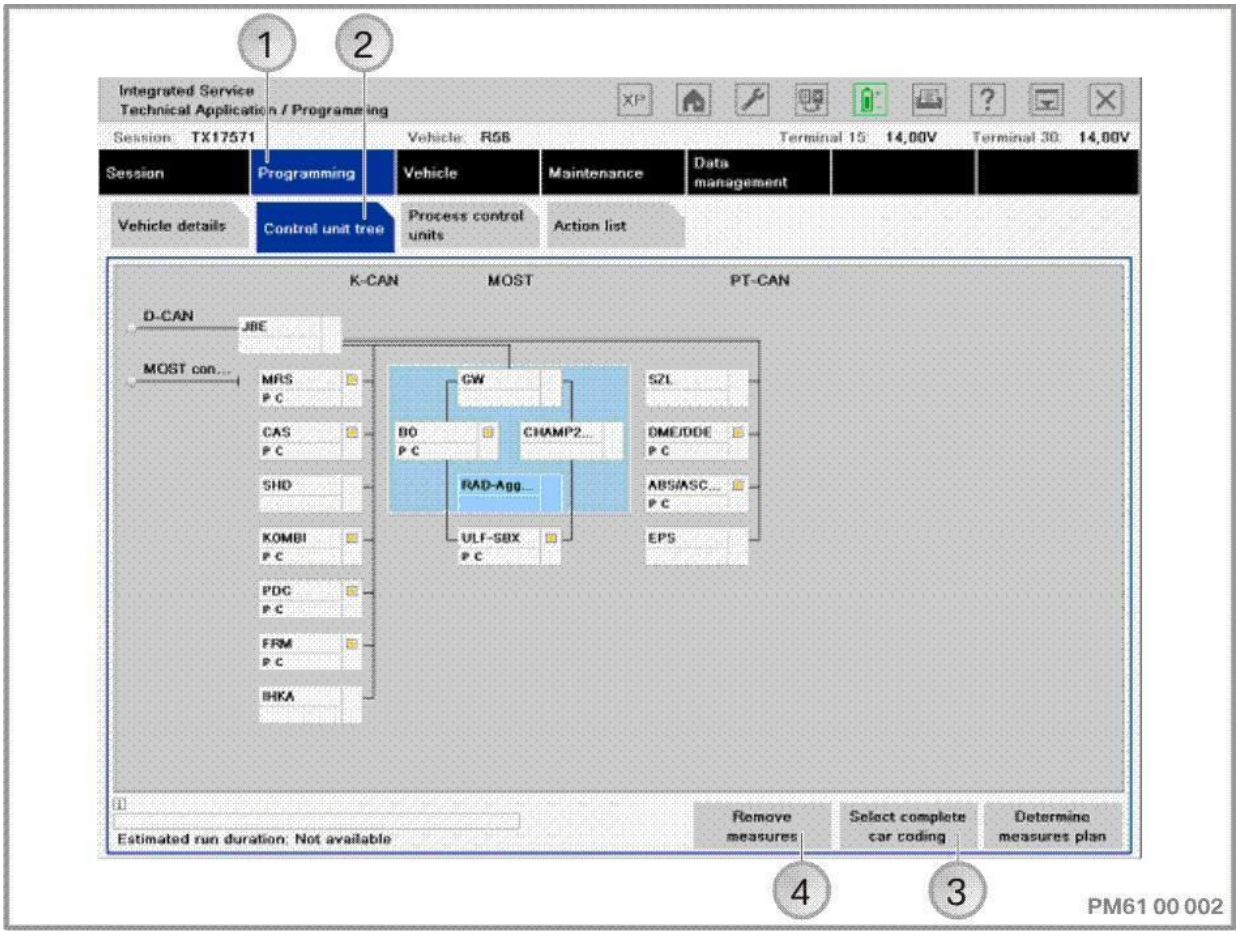
NOTE:

If the determination of the target context did not result in any actions, the "Determine measures plan" button is deactivated.

"Control Unit Tree" tab:

The control unit tree visualises the control units fitted in the vehicle according to the topology. All connected control units are displayed on each data bus. Some control units are connected to several data buses. In this case the control units on the primary programming channel are shown in white. The control units on the other data buses are shown in grey and the primary programming channel is also displayed. When the control unit has been selected, additional information is displayed. The control unit is shown with a red border on all data buses.

Combined control units are shown within a light blue area.

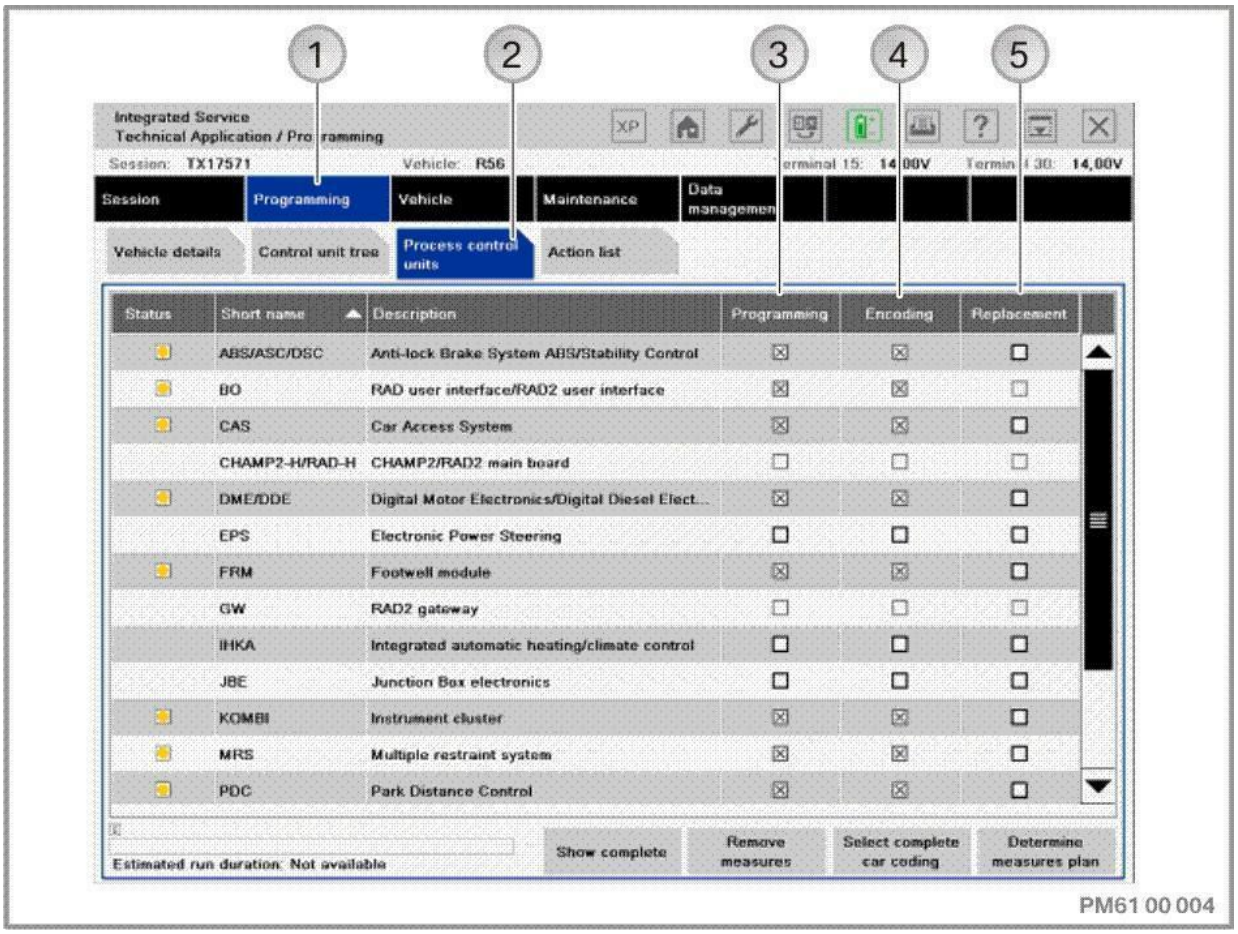


Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Control unit tree" tab
3	"Select complete car coding" button Complete car coding of the vehicle is selected	4	"Remove measures" button, measures determined in the target context are removed

NOTE:

Actions (e.g. changing CKM values) can be performed without updating the integration level. To do this, press the "Remove measures" button to acknowledge. All the previously planned measures will be permanently deleted. Control unit actions that are relevant for updating the integration level cannot be manually selected.

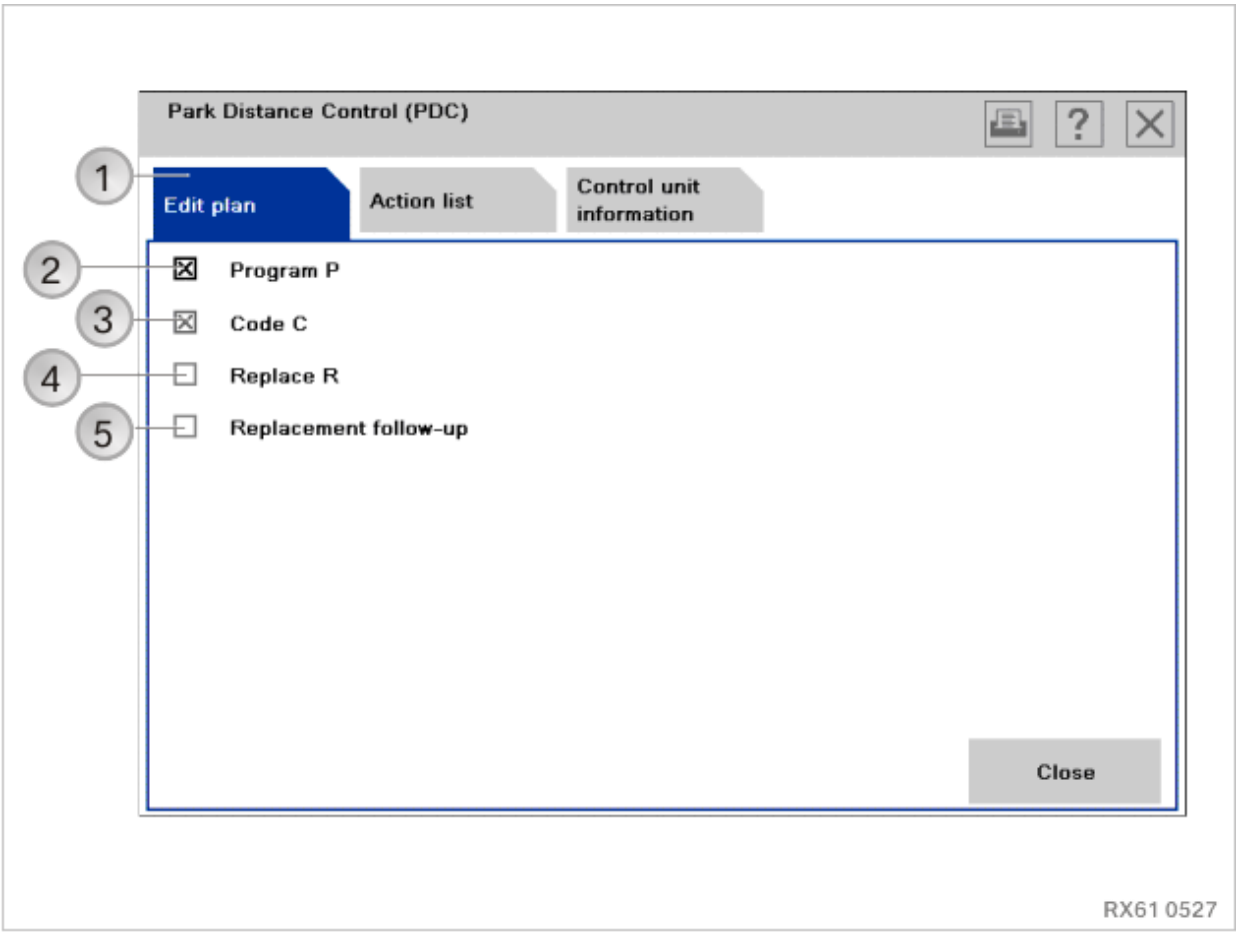
"Edit control units" tab:



Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Edit control units" tab
3	Program Program control unit	4	Encoding, Encode control unit
5	Replace Exchange (replace) control unit		

The actions available for the control units ("Programming", "Encoding" or "Replacing") can be selected directly.
If an action is added automatically by ISTA/P (e.g. encoding with selection "Replacing"), the check box is greyed out. The action can not be removed manually.
Dialogue box after clicking on the control unit in "Edit control units" or on the control unit in the "Control unit tree".

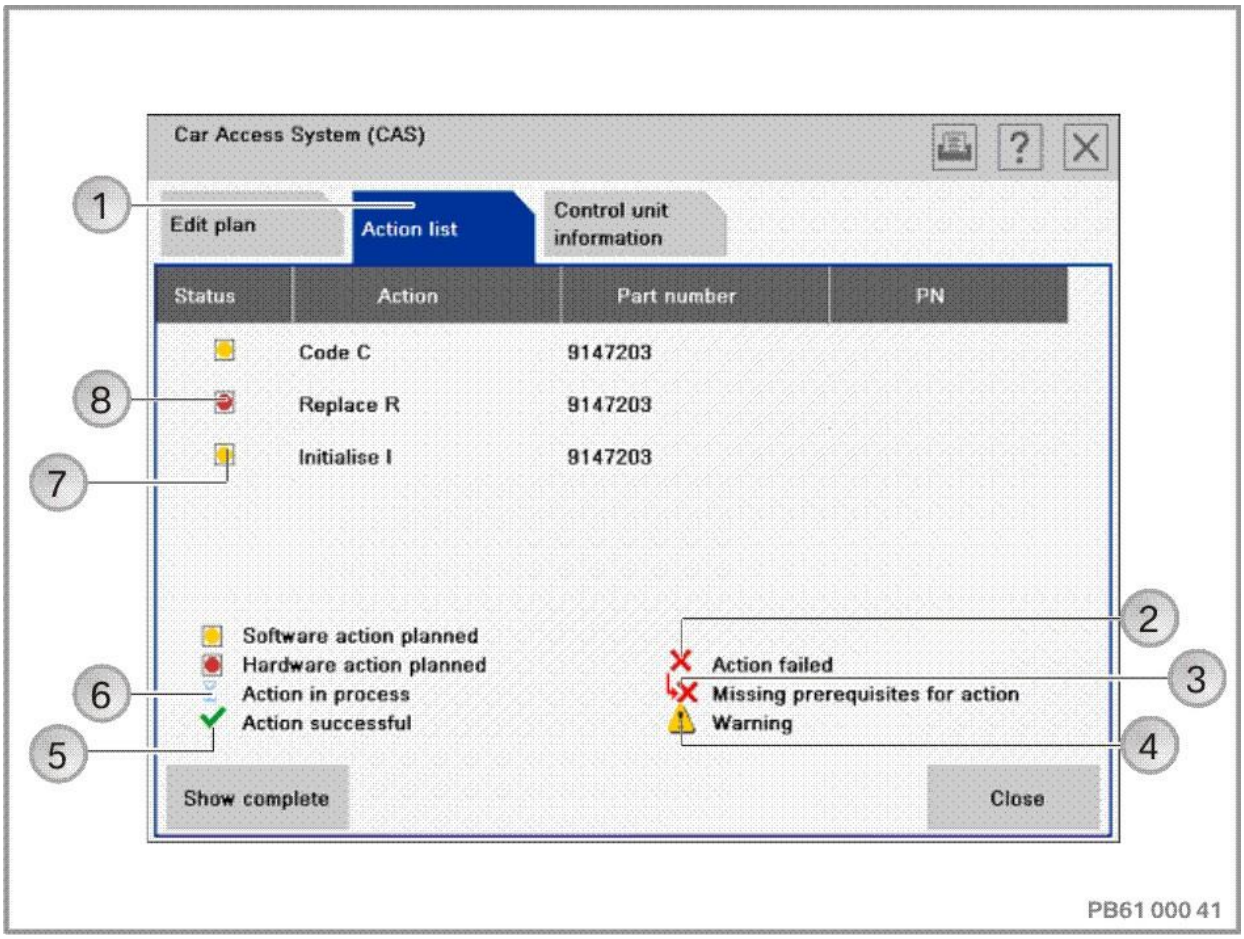
After selection of control unit, "Edit plan" tab:



Index	Screen element	Index	Screen element
1	"Edit plan" tab	2	Program Program control unit
3	Encoding, Encode control unit	4	Replace Exchange (replace) control unit
5	Replacement follow-up Follow-up already exchanged (replaced) control unit		

The available actions for a control unit are individual. They can differ from one control unit to the next depending on which actions are defined.

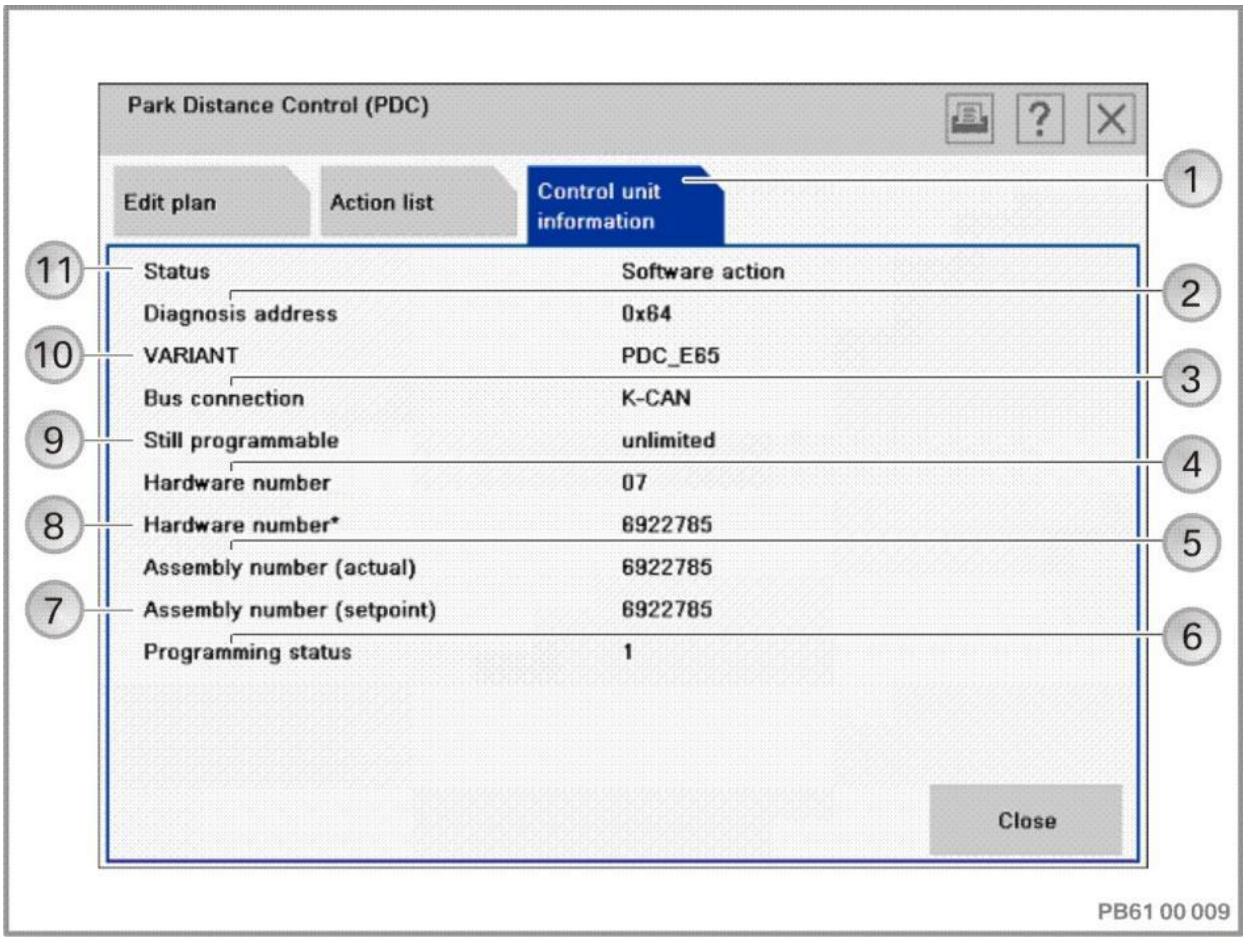
Section after selection of control unit, "Action list" tab:



Index	Screen element	Index	Screen element
1	"Action list" tab	2	"Action unsuccessful" symbol
3	"Missing prerequisites for action" symbol	4	"Warning" symbol
5	"Action successful" symbol	6	"Action being executed" symbol
7	"Software action planned" symbol (e.g. encoding)	8	"Hardware action planned" symbol (e.g. control unit replacement)

When the "Action list" tab is selected, the planned actions are displayed with their respective status.

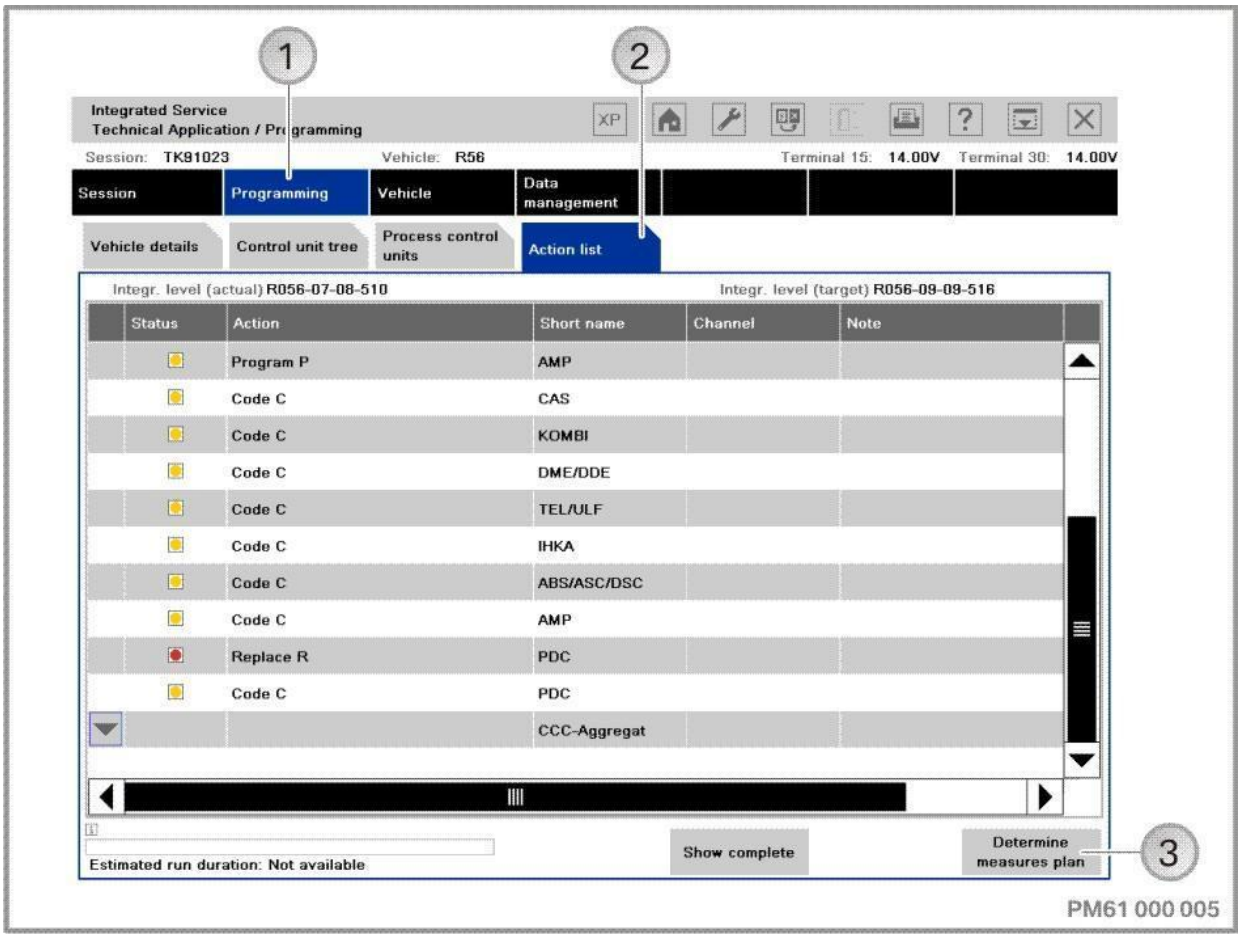
Section after selection of control unit, "Control unit information" tab:



Index	Screen element	Index	Screen element
1	"Control unit information" tab	2	Diagnosis address of the control unit
3	Bus system to which the control unit is connected	4	Hardware number
5	Assembly number (actual)	6	Programming status Display of detailed information
7	Assembly number (setpoint)	8	Hardware number*, hardware with program status
9	Still programmable Displays how often the control unit can still be programmed	10	Version Version of the control unit
11	Status, scheduled action		

When the "control unit information" tab is selected, the information on the selected control unit is displayed.

"Action List" tab:



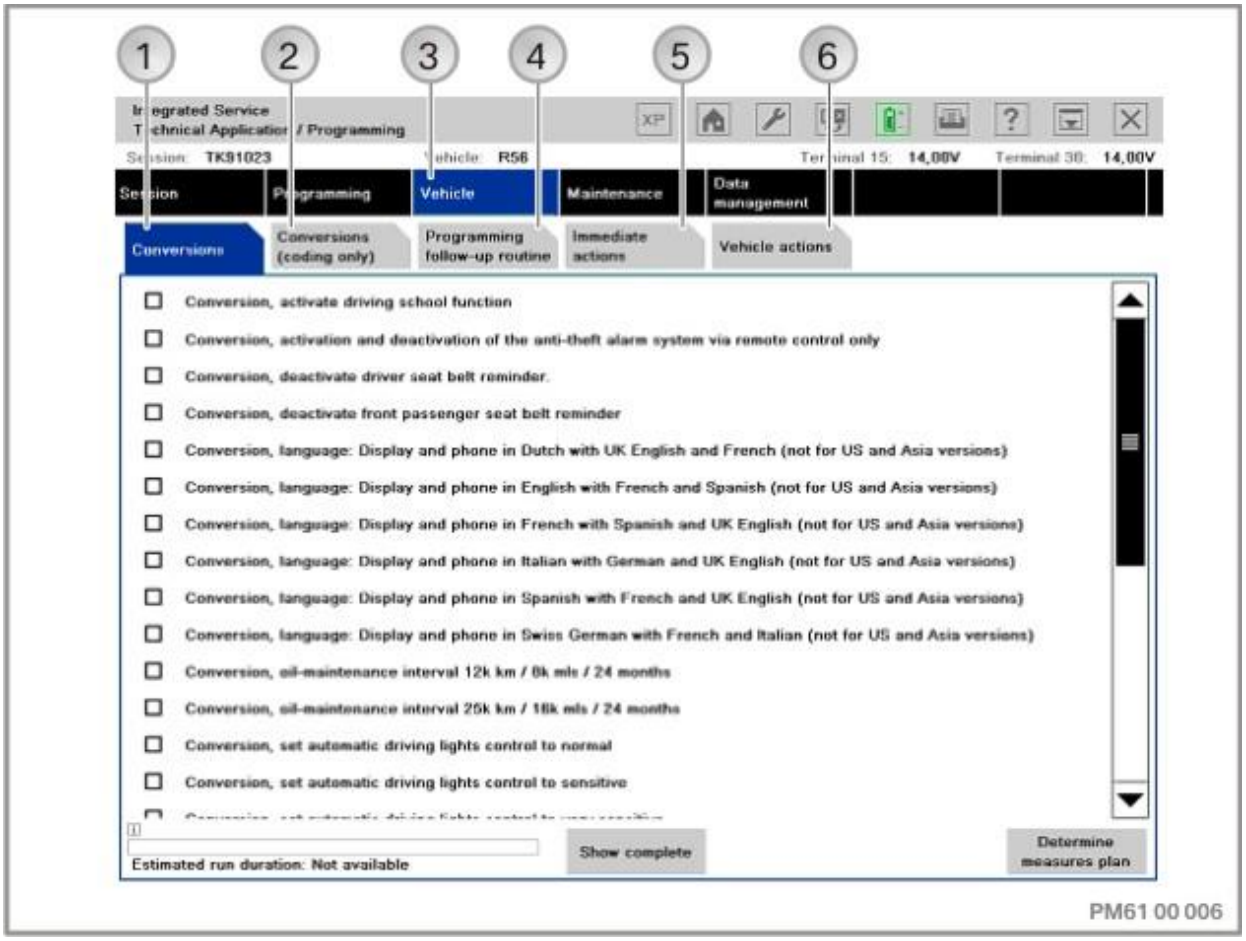
Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Action list" tab
3	"Determine action plan" button		

The "Action list" is a tabular summary of the planned actions. The actions are also displayed in the "Action plan". Information on the control units can also be displayed (e.g. control unit no longer programmable).

28.2. "Vehicle" menu

By switching to the "Vehicle" menu, the following actions can be added to the programming procedure:

- Carrying out conversion and retrofitting, see "Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes, page 55“
- Post programming initialisation, see "Post programming initialisation (service function, initialisation, adjustment), page 71“
- Immediate actions, see "Immediate actions (executing service functions without action plan / or final report), page 76“
- Adjust CKM values, see "Car & Key Memory (CKM), page 67“
- Vehicle actions (e.g. HDD update*, see "Updating and enabling navigation system map data, updating Gracenote®, page 118").



Index	Screen element	Index	Screen element
1	"Conversions" tab available conversions and retrofits are displayed	2	"Conversions (coding only)" tab (for vehicles with vehicle electrical system 2000 only). Available conversions and retrofittings are displayed (no update of the integration level)
3	"Vehicle" menu	4	"Post programming initialisation" tab • Available service functions are displayed • Read/delete fault memory
5	"Immediate Actions" tab, e.g. • Write down system time and date • Delete transport mode • Set transport mode • Display/delete fault memory	6	"Vehicle actions" tab: • Update of navigation system map data (HDD update)* • Enable map data for navigation system* • Update Gracenote®* • Import vehicle order • Select complete car coding

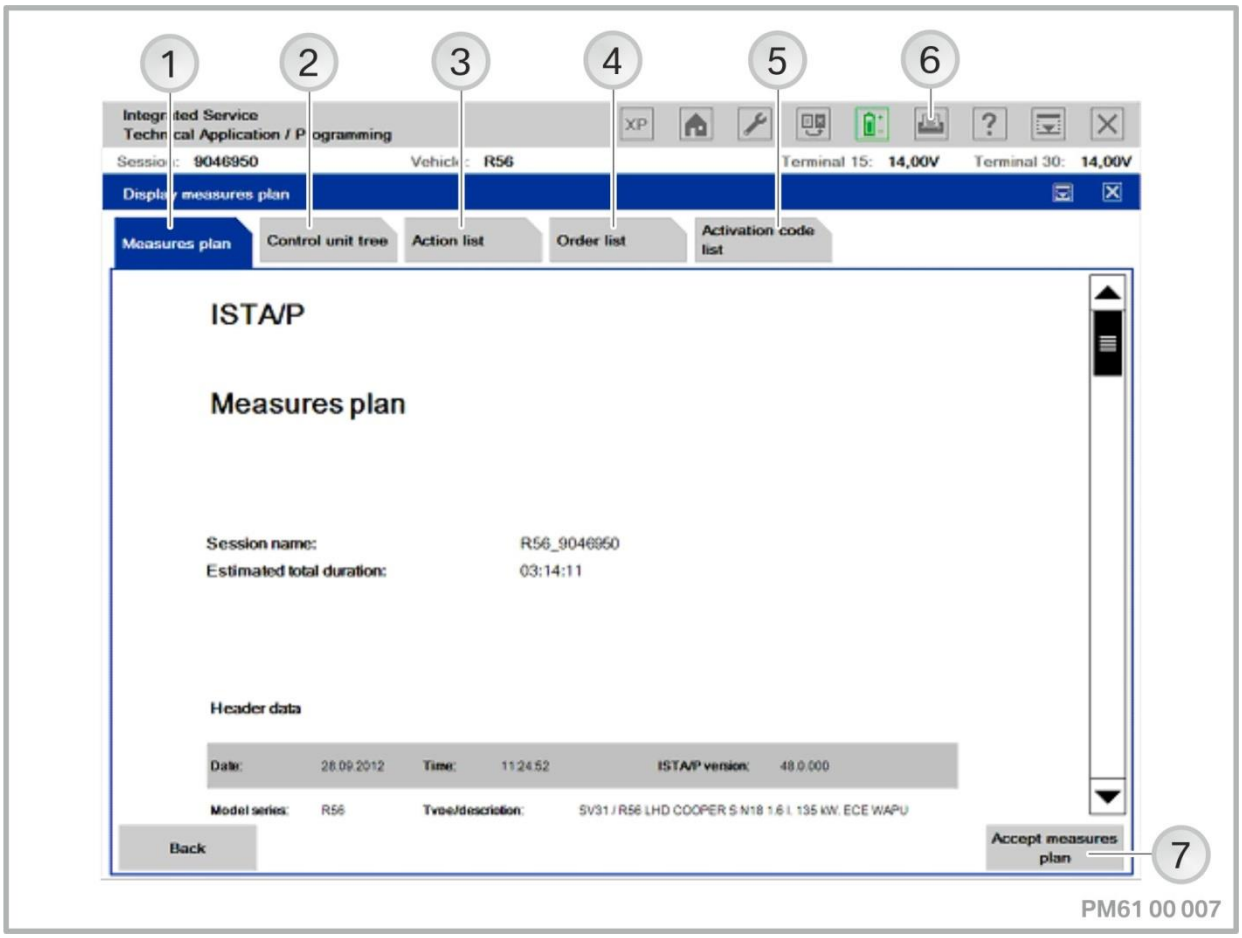
On vehicles with CKM, the "CKM" tab is also displayed.

To select further actions (programming, encoding), switch back to the "Programming" menu.

Determine measures plan

User action	Result
Press the "Determine action plan" button to acknowledge.	The action plan is determined and displayed in the "Display action plan" menu. The following tabs are displayed: • "Action plan" • "Control unit tree" • "Action list" • "Order list" (only in the event of control unit replacement) • "Enabling code list“ (only if FSC used). The action plan is displayed in the menu window. Control units that are to be treated are marked with a yellow symbol. A red symbol indicates replacement or installation of a control unit. If no symbol is displayed, no actions are scheduled for the control unit. The actions are displayed as follows: **P** Program **B** Program bootloader **C** Encode **U** Removal **M** Installation **R** Replace **I** Initialise **A** Activate **D** Deactivate **H** Updating of navigation system map data (HDD update)*.
Select "Action plan" tab.	The action plan is displayed in the print preview.

Action plan in print preview:



Index	Screen element	Index	Screen element
1	"Action plan" tab, of the action plan is displayed	2	"Control unit tree" tab, The control unit tree with the scheduled actions is displayed
3	"Action list" tab, The scheduled actions are displayed in the form of a table	4	"Order list" tab Control units to be replaced are displayed with order numbers
5	"Enabling code list" tab, all enabling codes used are displayed.	6	"Print" button, The action plan is printed
7	"Accept action plan" tab, Runs the action plan and programs the vehicle		

If enabling codes are used, the "Enabling code list" is also displayed. All enabling codes used are displayed here.
The measures plan comprises actions that have been determined as necessary to eliminate a defective vehicle condition. Apart from the actions determined, the vehicle details, session name and ISTA/P version used are also displayed.

Runs the action plan and programs the vehicle

NOTE:

During the processing of the action plan, manual user actions may be required at a few places, especially

- before the beginning of vehicle programming/encoding of the individual control units (refer to information in chapter "Preparation and subsequent evaluation of vehicle programming/encoding, page 17")
- When programming the CAS, observe the notes for the service function before execution, etc.

The beginning of the vehicle programming/encoding should be monitored, in order to respond to any possible pop-ups displayed in the near field. The started vehicle programming/encoding can be recognised by the progress bar (control unit tree) or display in percent (action list) of the individual control units.

User action	Result
Check action plan for completeness and correctness. Print out action plan. Press the "Accept action plan" button to acknowledge.	If applicable, the "Instructions before beginning the action plan" dialogue box will be displayed.

Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The action plan is executed. • The dialogue box "Important notes before starting to carry out the service functions" is possibly displayed. • The "Required post programming initialisation“ dialogue box may be displayed. • The "Important information before beginning the initialisations" dialogue box may be displayed. • The "Conversion instructions" dialogue box may be displayed, see "Control unit replacement, page 96“. • The "Existing fault code entries" dialogue box may be displayed. • The dialogue box "Important notes after completion of measures plan execution" is possibly displayed.
Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The "Session follow-up work" dialogue box may be displayed.
Follow notes and note if necessary. Press the "OK" button to acknowledge.	The final report is displayed in the menu "Action plan execution complete". The following tabs are displayed: • "Final report" • "Control unit tree" • "Action list".
Check final report for completeness and faults. Follow instructions. Print out final report. Confirm "End session" button.	Programming is ended ISTA/P switches to the Session menu

29. MINI: Programming navigation systems

29.1. Programming using ISTA/P

The navigation system in the series R55, R56, R57, R58, R59, R60, and R61 is not programmed with the "BMW Navigation" CD but only using the programming system ISTA/P. For more information see chapter(s):

- "MINI: Vehicle programming/encoding, page 176",
- "Updating and enabling navigation system map data, updating Gracenote®*, page 118".

29.2. CD "BMW Navigation"

Procedure as follows:

The CD contains all software versions of "BMW Navigation" for the series R50, R52and R53.

NOTE:

The basic requirement for programming is that the vehicle is correctly prepared. Refer to information in chapter "Preparation and subsequent evaluation of vehicle programming/encoding" for programming and encoding the navigation systems.

User action	Result
Insert CD in the navigation system CD drive.	
	It will take about 15 minutes to load the software.
	The CD drive automatically opens.
Remove the CD from the drive.	
Confirm end of programming.	

NOTE:

The navigation computer must not be cut off from the voltage supply for as long as the LED on the computer remains on. There is otherwise a risk of incorrect data being written to the memory, in which case correct operation of the computer can no longer be guaranteed.

NOTE:

During the programming procedure, the control display, on-board computer, or central information display screen may flicker.

NOTE:

If the current software version is already programmed, the CD will be ejected again immediately.

Exception: R50, R52 and R53 with navigation system (SA 609)

For vehicles with production date beginning September 2001, or for all vehicles with split-screen software, use the latest "BMW Navigation" CD:

Version 1

The navigation computer Mk3 with navigation system (SA 609) has operating software V17 or earlier installed. The current operating software with the "Split-screen software" package (at an extra charge) should be retrofitted:

- Read out the software version.
- Follow the installation instructions in the cover of the operating software CD
- Insert current navigation system operating software CD.
- The installation will start automatically.
- When the installation is complete, the CD will automatically be ejected. The installation can take up to seven minutes.
- Remove the CD
- Press the rotary push button to restart the navigation computer (please refer to the instructions displayed on the on-board monitor).
- The instruction "Insert V17 or Key CD" appears in the display of the on-board computer
- Insert the Key CD
- When the installation is complete, the Key CD will automatically be ejected. The installation can take about two minutes.
- Remove the Key CD
- Following this, the navigation computer is automatically restarted.

Version 2

In case of complaint, the navigation computer Mk3 should be replaced in a vehicle with navigation system (SA 609). A new navigation computer Mk3/ with the current operating software should be installed:

- Read out the software version
- Install new navigation computer in vehicle. Please refer to the Electronic Parts Catalogue (EPC).
- Follow the installation instructions in the cover of the operating software CD
- Insert current navigation system operating software CD.
- The installation will start automatically.
- When the installation is complete, the CD will automatically be ejected. The installation can take up to seven minutes
- Remove the CD
- Press the rotary push-button to restart the navigation computer (please refer to the instructions displayed on the on-board monitor).
- Encode the navigation computer (see BMW ISTA workshop systems)
- The navigation computer must go into rest state. To do this, switch the ignition off. After a minute, the "Mains voltage LED" at the navigation computer goes out.

NOTE:

For vehicles with production date before September 2001 and Mk3 navigation computer without split-screen software, use the CD "BMW Navigation V17.1.".

30. MINI: Installation locations of OBD diagnostics socket and MOST

30.1. Connection options for MINI series

Use of ICOM

All MINI model series can be processed with the ICOM A, B and C modules.
Graphics, information and connection sequence, see "ICOM (Integrated Communication Optical Module), page 12".
The following overview shows which ICOM interfaces are approved for vehicle programming/encoding on which model series:

Model series	Vehicle interface (connection via OBD diagnostic socket)		MOST capability (multi-channel programming)
	ICOM A and C	ICOM A	ICOM A and B (Only possible if the MOST direct access port is available)
R55, R56, R57, R58, R59, R60, R61	-	X	X
R50, R52, R53	X	X	-

NOTE:

On the series R55, R56, R57, R58, R59, R60, R61 there is only a MOST port if the following equipment is installed:

- BMW Professional radio (RAD2)
  In vehicles as of 03/07, a MOST direct access port is only available if a further MOST device, such as a CDC, is installed. No MOST direct access port is provided on vehicles from 06/08 with RAD2 and CDC preparation.
- MINI navigation system

30.2. Installation locations of OBD diagnostic socket:

R55, R56, R57, R58, R59, R60, R61

In the driver's footwell, near the A-pillar.

R50, R52, R53

In driver's footwell, on A-pillar.

ATTENTION!

Pins that have been pushed back or have expanded in the OBD diagnostic socket can cause communication faults between the programming system and the vehicle. Before connecting an ICOM, check the contacts in the OBD diagnostic socket.

NOTE:

After performing diagnosis or vehicle programming/encoding, the OBD diagnostic socket must be sealed with the sealing cap.

30.3. Installation location of MOST direct access port (when available):

R55, R56, R57, R58, R59, R60, R61

In passenger's footwell, behind A-pillar trim panel.

IMPORTANT!

The MOST port can only be pulled out by approx. two to three centimetres. Risk of damaging optical fibres.

NOTE:

To program/encode vehicles with MOST direct access port, the connection between the ICOM and the vehicle must be set up using the MOST.

NOTE:

Check that the MOST direct access port is correctly installed following any repair work in the front passenger footwell (e.g. control unit replacement).

NOTE:

Close off or reconnect the MOST direct access port after use (protective cap, jumper).

31. Rolls-Royce: Vehicle programming/encoding

The following pages contain descriptions of the vehicle programming/encoding for the Rolls-Royce series.
For more information see chapter "Rolls-Royce: Programming routine, page 200.

NOTE:

The correct initial and subsequent evaluation of the vehicle is the fundamental prerequisite for trouble-free vehicle programming/encoding. See "Preparation and subsequent evaluation of vehicle programming/encoding, page 17".

Procedure in the event of programming aborts

If programming or encoding interruptions occur during a session, follow the instructions of ISTA/P. For help support and solutions for common problems, refer to the ISTA/P Version Notes.
If programming or encoding interruptions are caused by the vehicle and a solution can not be found at the retail trader, contact Technical Market Support.

32. Rolls-Royce: Programming routine

The following actions can be added to the programming procedure:

- Carrying out conversion and retrofitting, see "Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes, page 55“
- Adjust CKM values, see "Car & Key Memory (CKM), page 67“
- Post programming initialisation, see "Post programming initialisation (service function, initialisation, adjustment), page 71“
- Immediate actions, see "Immediate actions (executing service functions without action plan / or final report), page 76“
- Carry out vehicle actions, see ""Vehicle" menu, page 42“
- Replace control units, see "Control unit replacement, page 96“
- Programming control units
- Encode control units.

Actions for the control units can be selected as follows:

- Under the "Control unit tree" tab, click on the control unit
- Under the "Edit control units" tab, by direct selection of the actions, or by clicking on the control unit.

32.1. ”Programming” menu

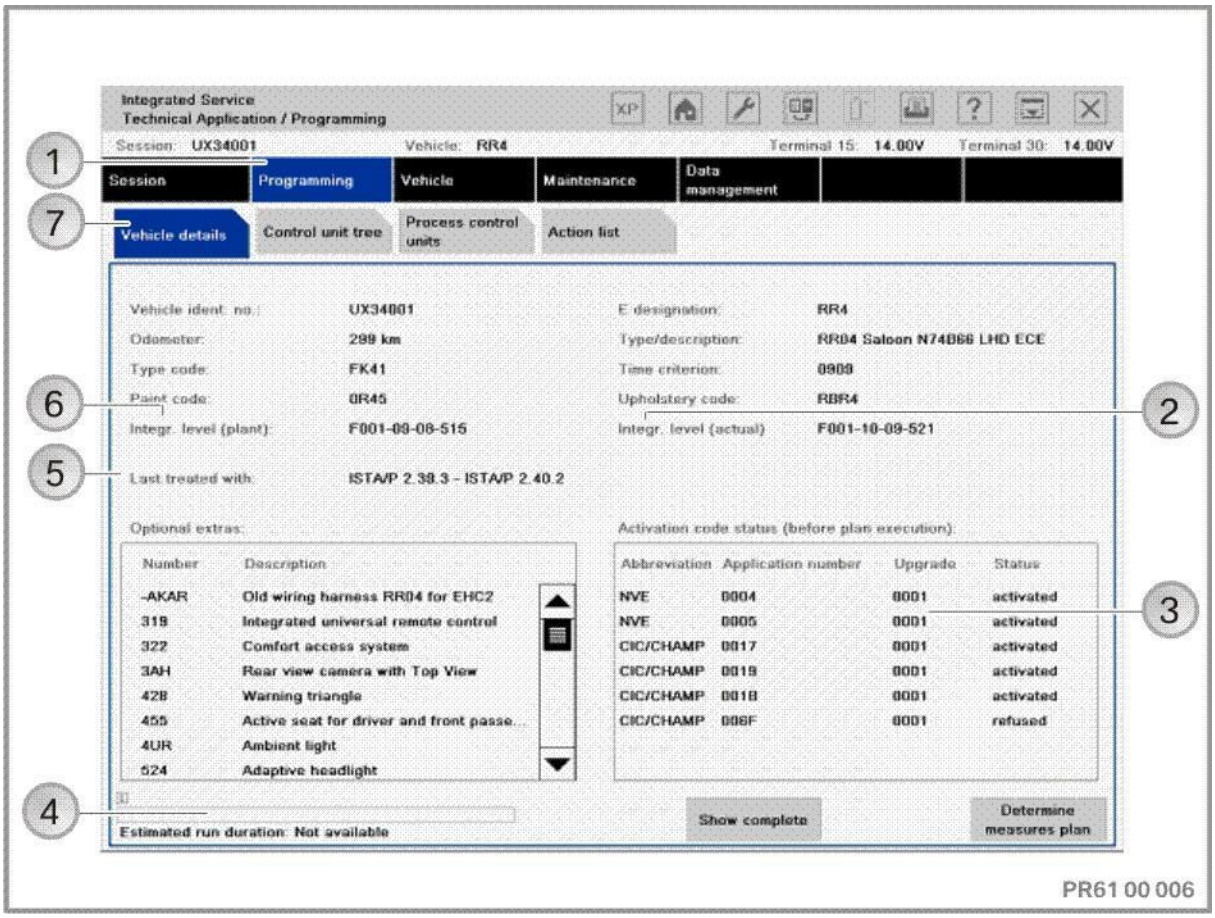
To perform vehicle programming/encoding, proceed as follows:

- Use ISTA/P to read out the vehicle data.
  See "”Session" menu (create new session), page 32".

After a new session has been created, the dialogue box "Session preparation" is displayed.

- Query: "Have control units been replaced?"
  Select "No" button.
  Exception: See “Control unit replacement, page 96“.
- Note: "Before start of vehicle programming…", see "Preparation and subsequent evaluation of vehicle programming/encoding, page 17".
  Follow the notes. Activate checkboxes and press the "Continue" button to confirm.

After successful determination of the target context the vehicle details are displayed. The details are presented in the "Programming" menu.



Index	Screen element	Index	Screen element

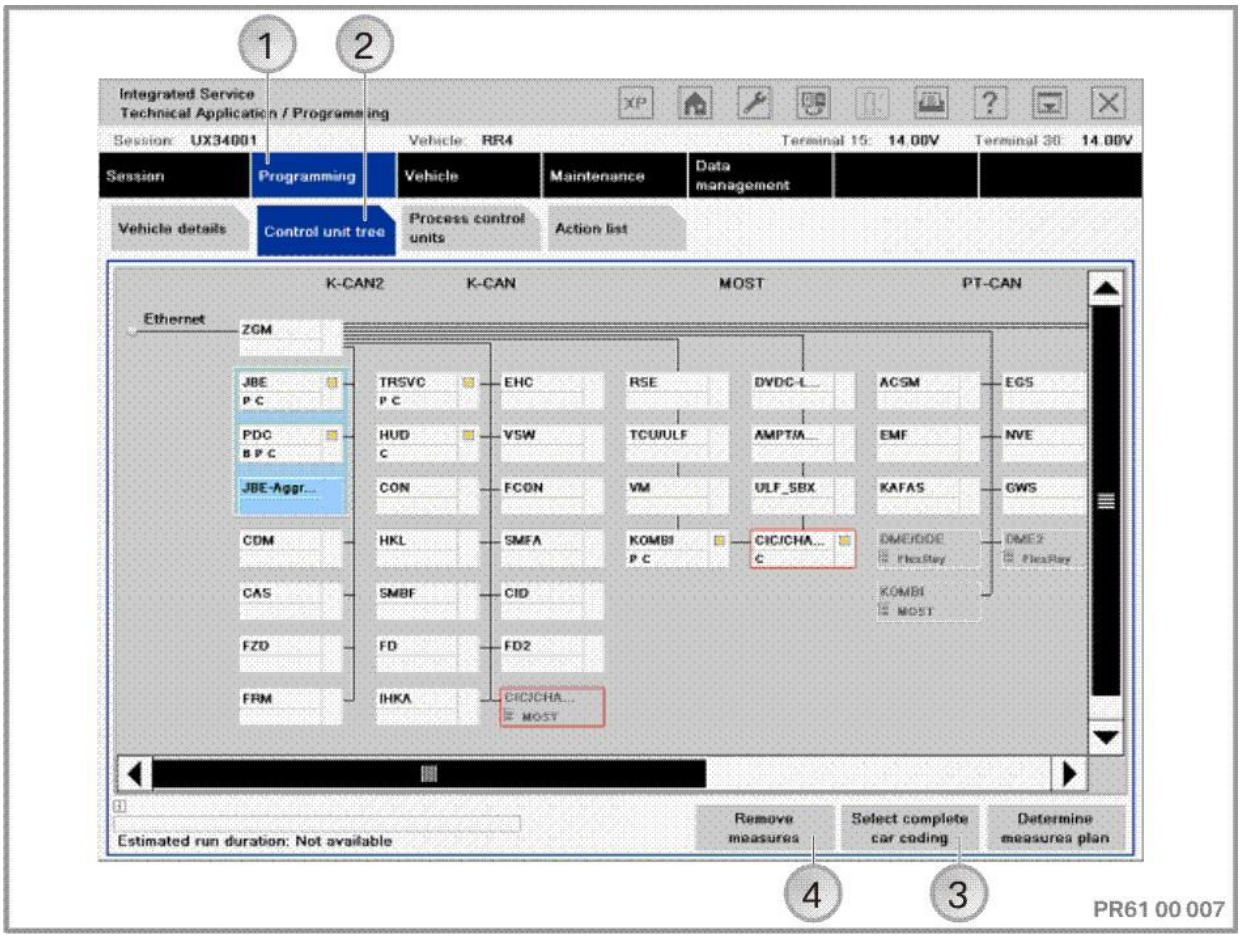
1	"Programming" menu	2	Integration level (actual) current integration level of the vehicle is displayed
3	Enabling code status, status of the enabling code required or used in the vehicle	4	Progress bar, shows the action plan determination process
5	Last treated with, the Progman or ISTA/P versions with which the vehicle was last treated are displayed	6	Integration level (works), displays the integration level with which the vehicle has been produced
7	"Vehicle details" tab		

NOTE:

If the determination of the target context did not result in any actions, the "Determine measures plan" button is deactivated.

"Control Unit Tree" tab:

The control unit tree visualises the control units fitted in the vehicle according to the topology. All connected control units are displayed on each data bus. Some control units are connected to several data buses. In this case the control units on the primary programming channel are shown in white. The control units on the other data buses are shown in grey and the primary programming channel is also displayed. When the control unit has been selected, additional information is displayed. The control unit is shown with a red border on all data buses.
Combined control units are shown within a light blue area.

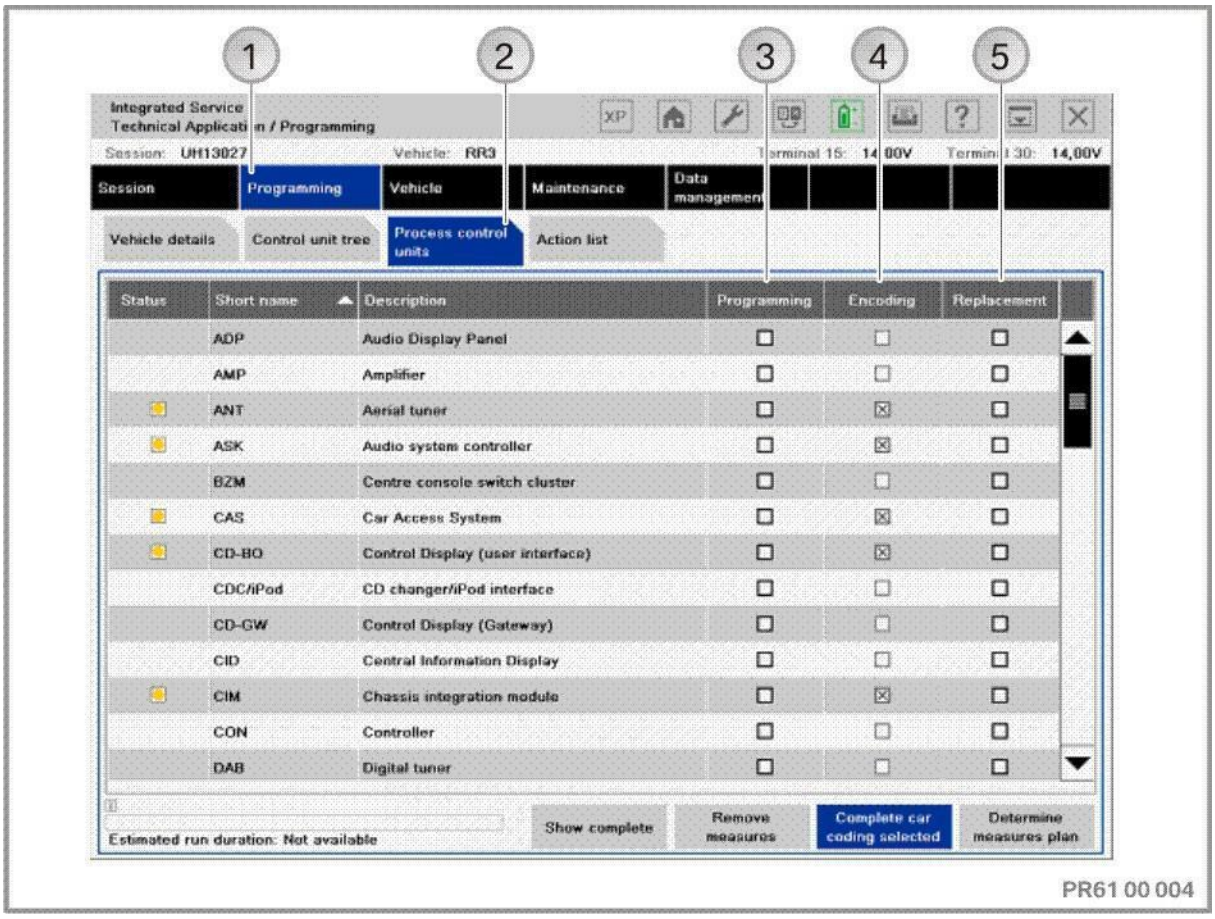


Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Control unit tree" tab
3	"Select complete car coding" button, complete car coding is selected	4	"Remove measures" button, measures determined in the target context are removed

NOTE:

Actions (e.g. changing CKM values) can be performed without updating the integration level. To do this, press the "Remove measures" button to acknowledge. All the previously planned measures will be permanently deleted. Control unit actions that are relevant for updating the integration level cannot be manually selected.

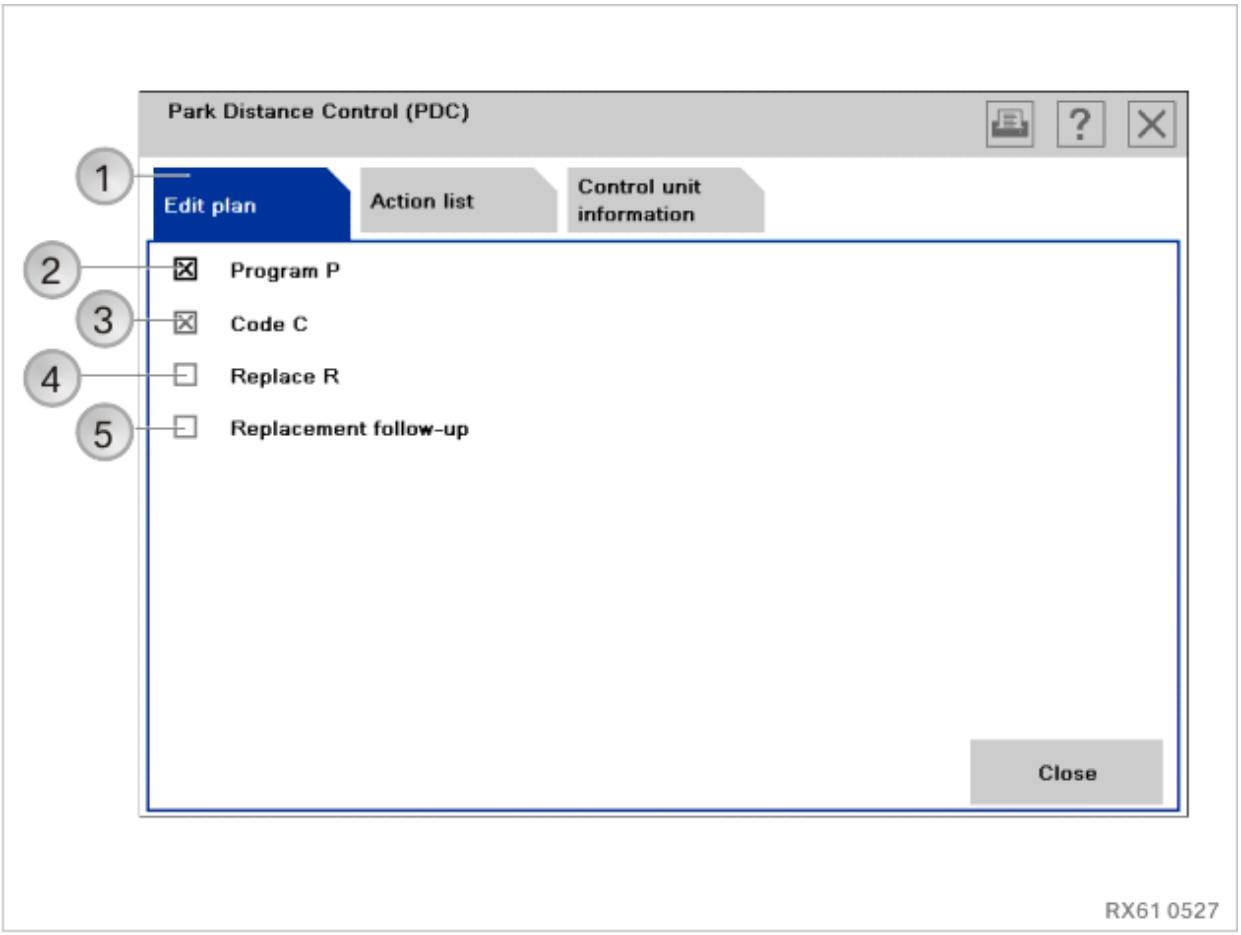
"Edit control units" tab:



Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Edit control units" tab
3	Programming, program control unit	4	Encoding, encode control unit
5	Replacement, exchange (replace) control unit		

The actions available for the control units ("Programming", "Encoding" or "Replacing") can be selected directly.
If an action is added automatically by ISTA/P (e.g. encoding with selection "Replacing"), the check box is greyed out. The action can not be removed manually.
Dialogue box after clicking on the control unit in "Edit control units" or on the control unit in the "Control unit tree".

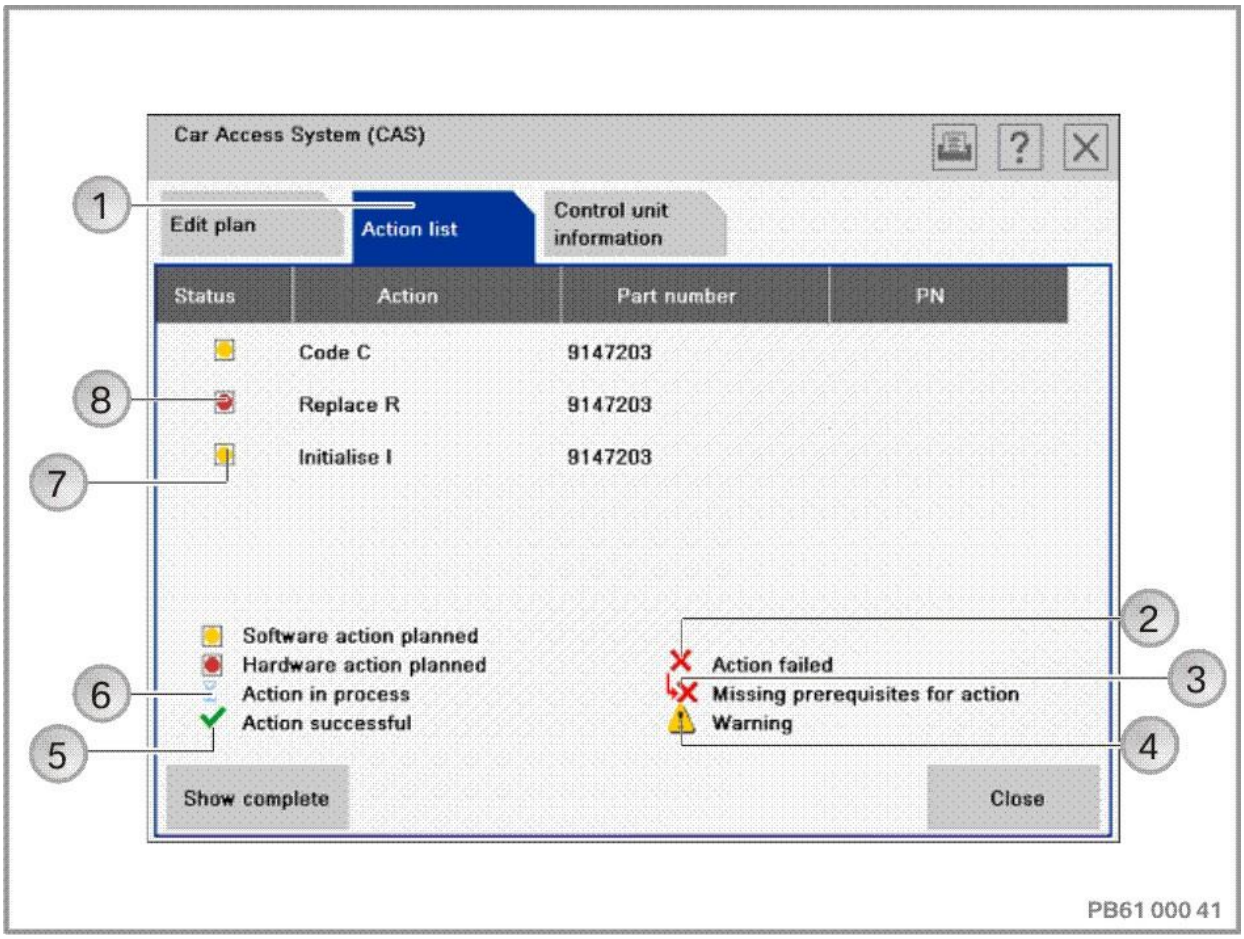
After selection of control unit, "Edit plan" tab:



Index	Screen element	Index	Screen element
1	"Edit plan" tab	2	Programming, program control unit
3	Encoding, encode control unit	4	Replacement, exchange (replace) control unit
5	Replacement follow-up, follow-up already exchanged (replaced) control unit		

The available actions for a control unit are individual. They can differ from one control unit to the next depending on which actions are defined.

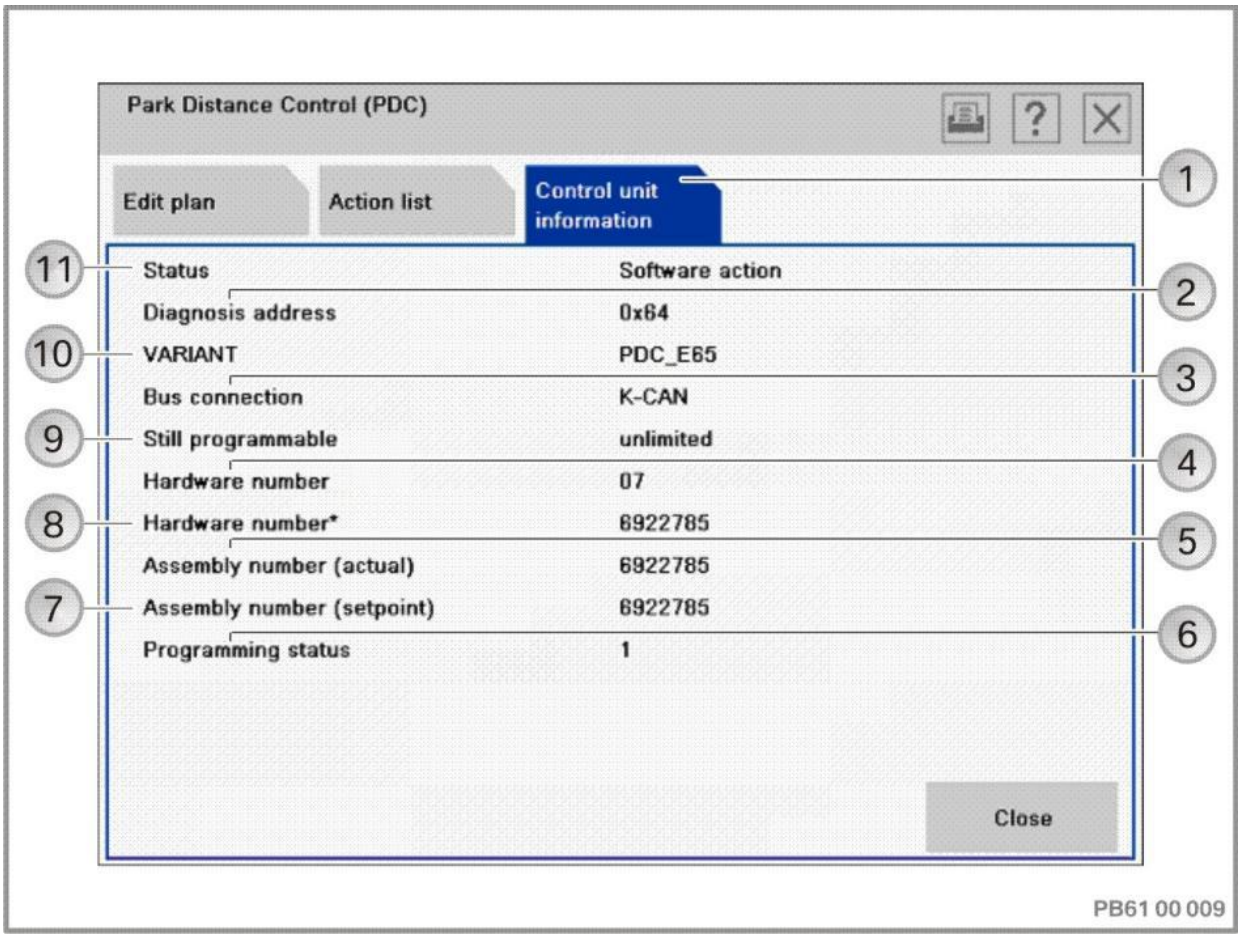
Section after selection of control unit, "Action list" tab:



Index	Screen element	Index	Screen element
1	"Action list" tab	2	"Action unsuccessful" symbol
3	"Missing prerequisites for action" symbol	4	"Warning" symbol
5	"Action successful" symbol	6	"Action being executed" symbol
7	"Software action planned" symbol (e.g. encoding)	8	"Hardware action planned" symbol (e.g. exchange control unit)

When the "Action list" tab is selected, the planned actions are displayed with their respective status.

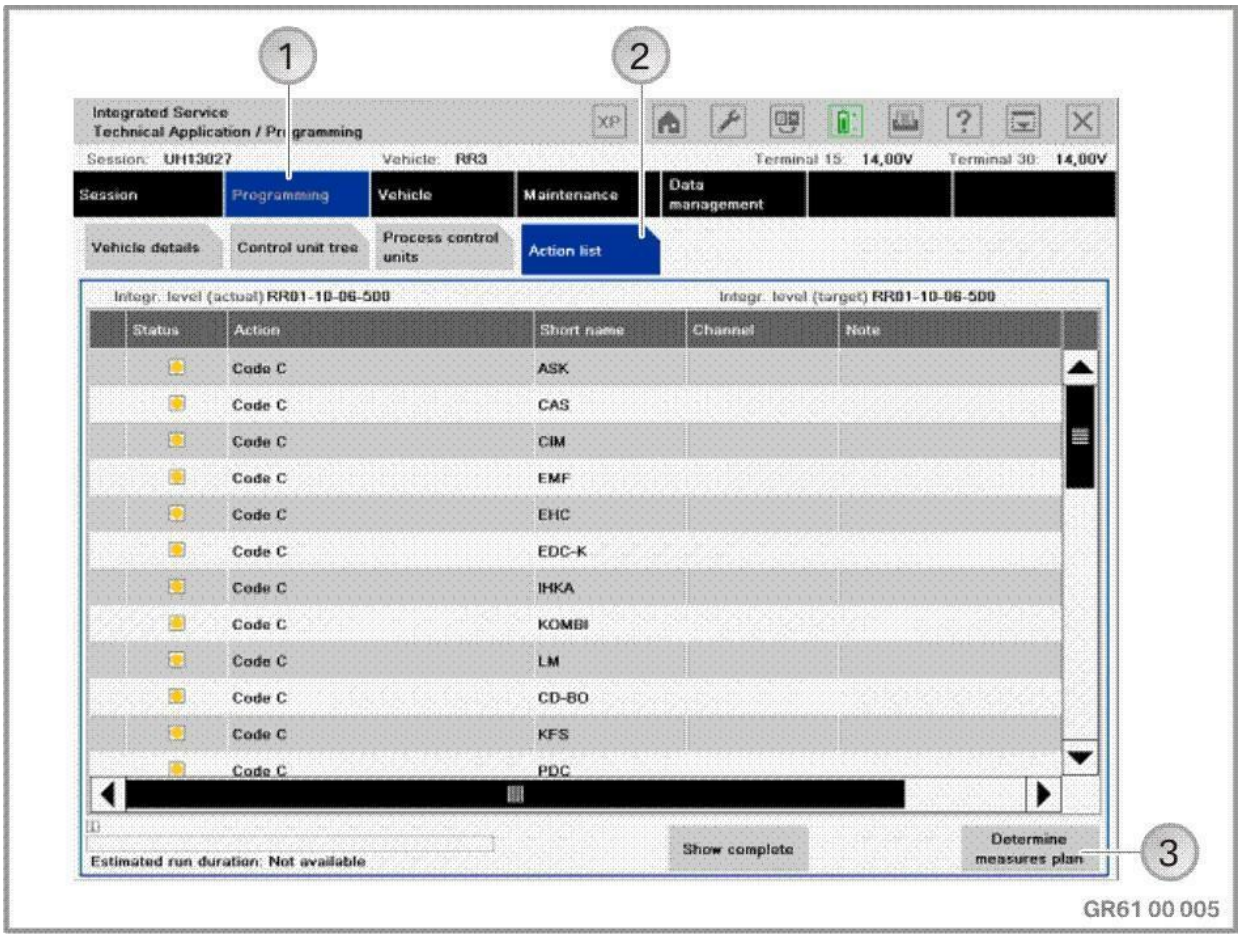
Section after selection of control unit, "Control unit information" tab:



Index	Screen element	Index	Screen element
1	"Control unit information" tab	2	Diagnosis address of the control unit
3	Bus system to which the control unit is connected	4	Hardware number
5	Assembly number (actual)	6	Programming status, display of detailed information
7	Assembly number (setpoint)	8	Hardware number*, hardware with program status
9	Still programmable, displays how often the control unit can still be programmed	10	Variant, version of the control unit
11	Status, scheduled action		

When the "control unit information" tab is selected, the information on the selected control unit is displayed.

"Action List" tab:



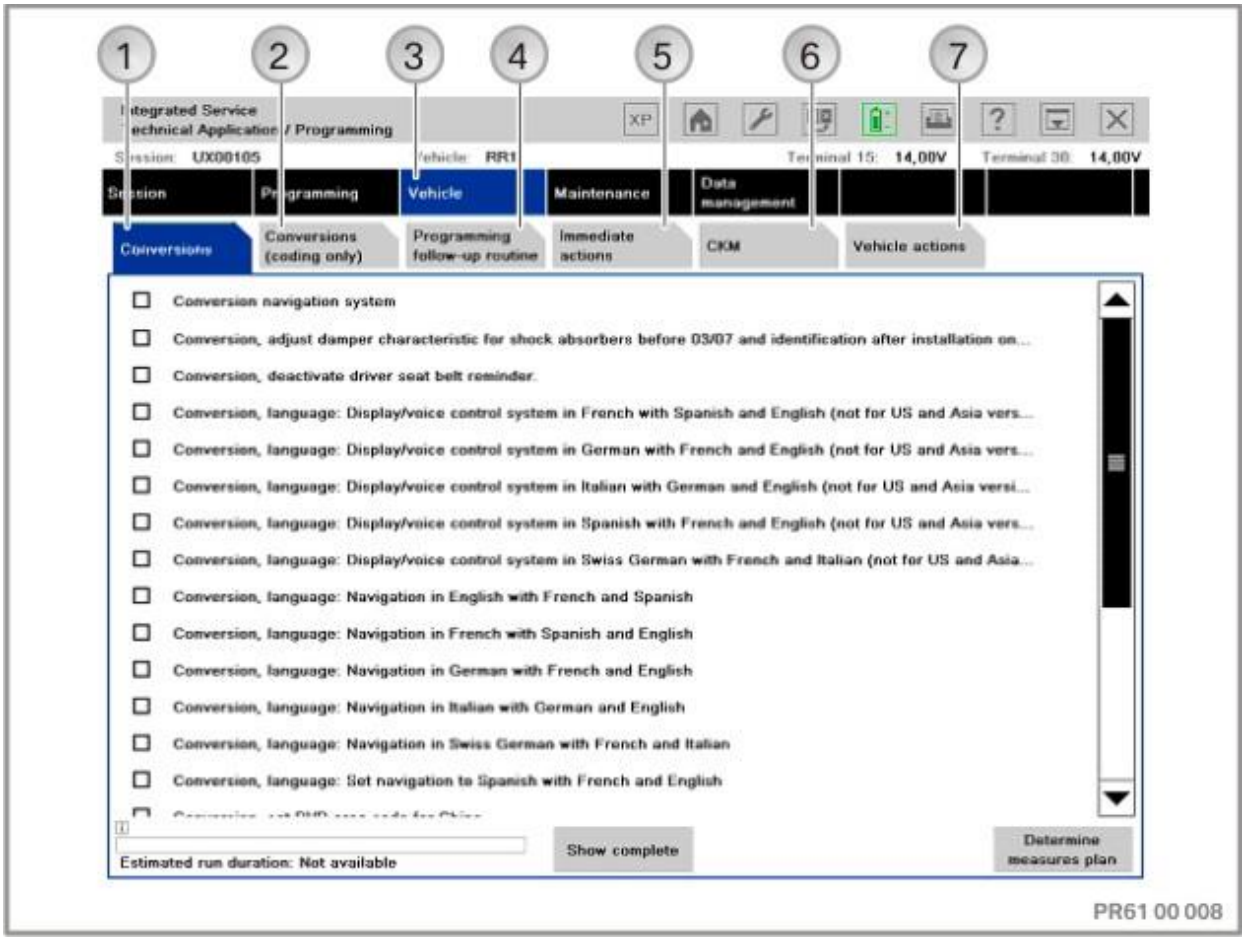
Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Action list" tab
3	"Determine action plan" button		

The "Action list" is a tabular summary of the planned actions. The actions are also displayed in the "Action plan". Information on the control units can also be displayed (e.g. control unit no longer programmable).

32.2. "Vehicle" menu

By switching to the "Vehicle" menu, the following actions can be added to the programming procedure:

- Carrying out conversion and retrofitting, see "Conversions and retrofits, importing vehicle order into vehicle, IBAC enabling codes, page 55“
- Post programming initialisation, see "Post programming initialisation (service function, initialisation, adjustment), page 71“
- Immediate actions, see "Immediate actions (executing service functions without action plan / or final report), page 76“
- Adjust CKM values, see "Car & Key Memory (CKM), page 67“
- Vehicle actions (e.g. HDD update*, see "Updating and enabling navigation system map data, updating Gracenote®, page 118").



Index	Screen element	Index	Screen element
1	"Conversions" tab available conversions and retrofits are displayed	2	"Conversions (coding only)" tab (for vehicles with vehicle electrical system 2000 only). Available conversions and retrofittings are displayed (no update of the integration level)
3	"Vehicle" menu	4	"Post programming initialisation" tab • Available service functions are displayed • Read/delete fault memory
5	"Immediate Actions" tab, e.g. • Write down system time and date • Delete transport mode • Set transport mode • Display/delete fault memory	6	"CKM" tab
7	"Vehicle actions" tab: • Update of navigation system map data (HDD update)* • Enable map data for navigation system* • Update Gracenote®* • Import vehicle order • Select complete car coding		

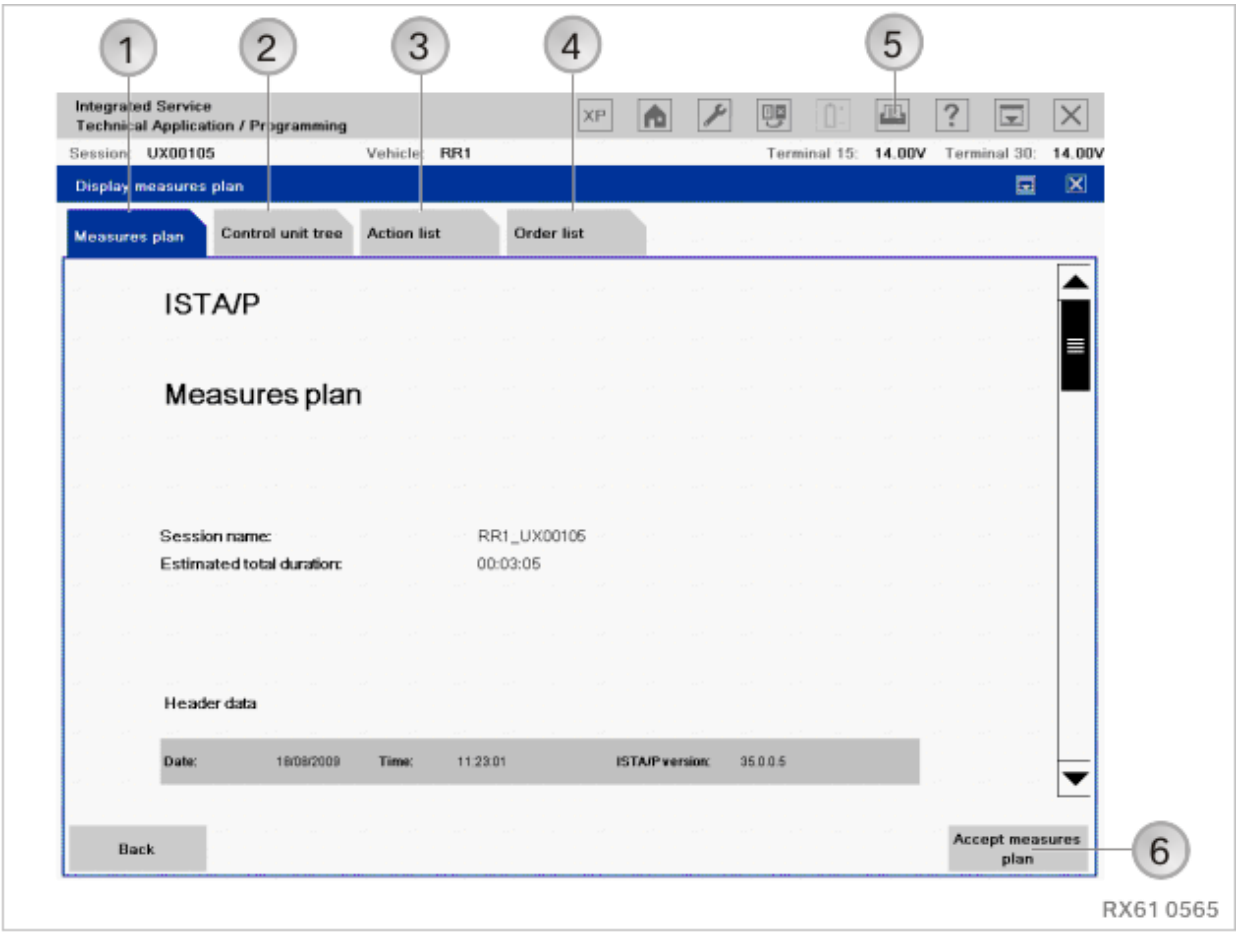
To select further actions (programming, encoding), switch back to the "Programming" menu.

Determine measures plan

User action	Result

Press the "Determine action plan" button to acknowledge.	The action plan is determined and displayed in the "Display action plan" menu. The following tabs are displayed: • "Action plan" • "Control unit tree" • "Action list" • "Order list" (only in the event of control unit replacement) • "Enabling code list“ (only if FSC used). The action plan is displayed in the menu window. Control units that are to be treated are marked with a yellow symbol. A red symbol indicates replacement or installation of a control unit. If no symbol is displayed, no actions are scheduled for the control unit. The actions are displayed as follows: **P** Program **B** Program bootloader **C** Encode **U** Removal **M** Installation **R** Replace **I** Initialise **A** Activate **D** Deactivate **H** Updating of navigation system map data (HDD update)*.
Select "Action plan" tab.	The action plan is displayed in the print preview.

Action plan in print preview:



Index	Screen element	Index	Screen element
1	"Measures plan" tab, the action plan is displayed	2	"Control unit tree" tab, the control unit tree with the scheduled actions is displayed
3	"Action list" tab, the planned actions are shown in table format	4	"Order list" tab, the control units to be exchanged are shown together with their order numbers
5	"Print“ button, the action plan is printed	6	"Accept action plan“ tab, carry out action plan and program vehicle

If enabling codes are used, the "Enabling code list" is also displayed. All enabling codes used are displayed here.

The measures plan comprises actions that have been determined as necessary to eliminate a defective vehicle condition. Apart from the actions determined, the vehicle details, session name and ISTA/P version used are also displayed.

Runs the action plan and programs the vehicle

NOTE:

During the processing of the action plan, manual user actions may be required at a few places, especially

- before the beginning of vehicle programming/encoding of the individual control units (refer to information in chapter "Preparation and subsequent evaluation of vehicle programming/encoding, page 17")
- When programming the CAS, observe the notes for the service function before execution, etc.

The beginning of the vehicle programming/encoding should be monitored, in order to respond to any possible pop-ups displayed in the near field. The started vehicle programming/encoding can be recognised by the progress bar (control unit tree) or display in percent (action list) of the individual control units.

User action	Result
Check action plan for completeness and correctness. Print out action plan. Press the "Accept action plan" button to acknowledge.	If applicable, the "Instructions before beginning the action plan" dialogue box will be displayed.

Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The action plan is executed. • The dialogue box "Important notes before starting to carry out the service functions" is possibly displayed. • The "Required post programming initialisation“ dialogue box may be displayed. • The dialogue box "Important information before beginning the initialisation" is displayed. • The "Conversion instructions" dialogue box may be displayed, see "Control unit replacement, page 96“. • The "Existing fault code entries" dialogue box may be displayed. • The dialogue box "Important notes after completion of measures plan execution" is possibly displayed.
Follow notes and note if necessary. Activate checkboxes and press the "OK" button to acknowledge.	The "Session follow-up work" dialogue box may be displayed.
Follow notes and note if necessary. Press the "OK" button to acknowledge.	The final report is displayed in the menu "Action plan execution complete". The following tabs are displayed: • "Final report" • "Control unit tree" • "Action list".
Check final report for completeness and faults. Follow instructions. Print out final report. Confirm "End session" button.	Programming is ended. ISTA/P switches to Session menu.

33. Rolls-Royce: Programming navigation systems

33.1. Programming using ISTA/P

The navigation system in the Series RR4 and Series 2 (RR1, RR2, and RR3) is not programmed with the "BMW Navigation" CD, but instead only by using the ISTA/P programming system.
For more information see chapter(s):

- "Rolls-Royce: Vehicle programming/encoding, page 199",
- "Updating and enabling navigation system map data, updating Gracenote®*, page 118".

33.2. CD "BMW Navigation"

Procedure as follows:

The CD contains all software versions of "BMW Navigation" for the Series RR1, RR2and RR3, not Series 2 in each case.

NOTE:

The basic requirement for programming is that the vehicle is correctly prepared. Refer to information in chapter "Preparation and subsequent evaluation of vehicle programming/encoding" for programming and encoding the navigation systems.

User action	Result
Insert CD in the navigation system CD drive.	
	It will take about 15 minutes to load the software.
	The CD drive automatically opens.
Remove the CD from the drive.	
Confirm end of programming.	

NOTE:

The navigation computer must not be cut off from the voltage supply for as long as the LED on the computer remains on. There is otherwise a risk of incorrect data being written to the memory, in which case correct operation of the computer can no longer be guaranteed.

NOTE:

During the programming procedure, the control display, on-board computer, or central information display screen may flicker.

NOTE:

If the current software version is already programmed, the CD will be ejected again immediately.

34. Rolls-Royce: Installation locations of OBD diagnostics socket and MOST

34.1. Connections options, Rolls-Royce series

Use of ICOM

Treating of all Rolls-Royce series is possible using the ICOM A module (connection via OBD-diagnostic socket).
Graphics, information and connection sequence, see "ICOM (Integrated Communication Optical Module), page 12".

34.2. Installation locations of OBD diagnostic socket:

RR1, RR2, RR3, RR4

In the driver's footwell, near the A-pillar.

IMPORTANT!

Pins that have been pushed back or have expanded in the OBD diagnostic socket can cause communication faults between the programming system and the vehicle. Before connecting an ICOM, check the contacts in the OBD diagnostic socket.

NOTE:

After performing diagnosis or vehicle programming/encoding, the OBD diagnostic socket must be sealed with the sealing cap.

34.3. MOST port

No MOST direct access port is installed in Rolls-Royce vehicles.

35. Glossary

Designation	Description
Bootloader	Bootstrap loader. A program independent of the main application. It is required to start the programs of the firmware. Comparable with the BIOS on an IBM-compatible PC. If the bootloader is programmed, the bootloader program is updated.

Bus systems	The bus systems enable the individual control units in the vehicle to be networked via serial interfaces. The following bus systems are used in BMW vehicles: • BSD (Bit-Serial Data interface) • byteflight • CAN bus (Controller Area Network bus) • DCAN (diagnosison CAN) • Throttle valve CAN • Ethernet (wire-conducted data network technology for local data networks and vehicle access) • FCAN (suspension CAN) • FlexRay • ICM-CAN (integrated chassis management controller area network) • H-CAN (Hybrid Controller Area Network) • K bus (body bus) (also known as I bus - instrumentation bus - in earlier models) • K-bus (body bus) • KCAN (body CAN) • K-CAN2 (body CAN 2) • K-Line (diagnostics line) • LIN bus (Local Interconnect Network bus) • Local-CAN (Local Controller Area Network) • M-bus (motor bus) • MOST bus (MediaOriented System Transport) • NAV-bus (navigation bus) • P-bus (periphery bus) • Private-CAN (Private Controller Area Network) • PT-CAN (Powertrain CAN) • PT-CAN2 (Powertrain CAN 2) • S-CAN (sensor CAN) • Safety-CAN • Tel-Commander-CAN • USB (Universal Serial Bus).

CBS data	Condition Based Service. The CBS data (for example state of engine oil, brake pad wear) are updated in the ignition key within a driving cycle. The CBS data can also be updated on the ignition key via a concealed service function in the ISTA workshop system.
Car and Key Memory	Performs customer-specific settings on the vehicle: • Car Memory settings affect all the users of a vehicle. • Key Memory settings are user-specific and relate to a key being used.
Encoding	Adapts the control units to the vehicle in which they are installed: Functions and characteristic maps are enabled or activated depending on the national-market version, vehicle equipment and vehicle type.
Diagnosis address	Address of control unit for diagnosis.
EWS/DME or EWS/DDE adjustment	Adjustment between EWS (electronic immobiliser) and DME/DDE control unit, control units are synchronised.
Vehicle order/central encoding key	Denotes the file in which various vehicle data (data status, optional equipment, etc.) are kept.
Flash-programming	Old designation for program (see below)
Enabling code	The enabling code generates a functional enhancement in the vehicle. Software enabling in a number of control units (e.g. when programming the CCC, an enabling code must be imported to activate the optional equipment "extended speech processing"). The background to this is the technology of Sweeping Technologies (SWT).
Short enabling code	Comparable with enabling code. Unlike the enabling code, the short enabling code is not a file. It is used for manual entry purposes.
Complete car coding	Matches functions to each other and synchronises them. This may be necessary if, after programming/encoding is completed, functions in the vehicle fail to work or fail to work properly.

Gracenote®	Music track recognition technology from Gracenote®. It provides the data (metadata) associated with the music tracks. This metadata contains information such as: • Artist/performer • Song title • Album • Year of publication • Genre
IBAC enabling code	Internet-based calculation of enable codes (**I**nternet **Ba**sed **C**alculation of enabling codes). The IBAC enabling code is required for conversions relevant to safety. Certain vehicle services can be enabled or disabled (for example airbags, telematics, visual seat belt warning, DVD lock, various engine and transmission conversions, importing the vehicle order).
ICOM	Integrated Communication Optical Module The ICOM is connected to the vehicle and linked with the network via the connection manager. The ICOM serves as the vehicle interface for vehicle processing (vehicle programming/encoding).
IMIB	Integrated Measurement Interface Box Measuring device for the ISTA workshop system. The IMIB is mainly operated online via the ISTA workshop system and controlled by the ISID.
ISAP	Integrated Service Access Point Wireless data transmission device for the ITOOLS.
ISID	Integrated Service Information Display The ISID is a mobile end device with an integrated display and is used, for example, to operate the ISTA/P.
ISPA	Integrated Service Processes Application Software for service consultation.
ISTA/P	Integrated Service Technical Application/Programming (programming system) The ISTA/P programming system is used for programming/encoding BMW Group vehicles.

ISTA/P Online	ISTA/P Online and OSS (Online Service System) were developed for independent vehicle workshops, trade guilds, associations, technical colleges and government agencies. A comprehensive spectrum, e.g. data for maintenance, repair and diagnosis, is made available over the internet in the OSS portal.
ISTA/P server	Integrated Service Technical Application/Programming server The ISSS and the ISPS make up the hardware that is used as the ISTA/P server. The ISTA/P server provides the ISTA/P application software.
ISTA/P client	Integrated Service Technical Application/Programming client The ISTA/P client serves as a graphical user interface for remote control of the ISTA/P server (ISSS or ISPS) and therefore for vehicle processing (vehicle programming/encoding) with ISTA/P. • The button for calling up the user interface of the ISTA/P client is stored in the Jumpgate. • After installation of the ISTA/P client, a screen symbol is placed on the desktop of the laptop computer or computer (workshop computer). The screen symbol is used to call up the user interface of the ISTA/P client.
ISSS	Integrated Software Service Station The ISSS makes up the hardware that is used as the ISTA/P server. Depending on requirements, the ISSS is equipped with a display screen, keyboard and mouse. The ISTA/P application software for vehicle processing (vehicle programming/encoding) is installed on the ISSS and ISTA/P server.
ISTA	Integrated Service Technical Application Diagnosis and technical documents.
Integration level/Integration stage	Production periods during vehicle development are denoted by integration levels (I-levels). Vehicle software version.
ITOOLS	The ITOOLS are ISID, ICOM, IMIB and ISAP
JETstream	Online update: Renews application software by loading new software packages.

Jumpgate	The buttons for calling up the ISTA/P client and for the Workshop System Management (WSM) are stored in the Jumpgate. The jumpgate is set up on the ISSS and ISID.
KISA	Customer-initiated software update for Combox control unit. Drivers for telephone and media player connection can be installed by the customer asynchronously to the integration level.
Web copy console	Web Copy Console for Navigation Data The Web Copy Console for road map data allows navigation maps (road maps) for the CIC to be copied onto the ISIS or ISPS hard disks. The copy web console can be called up via the address bar in the browser (http://<IP address ISIS or ISPS>:81/mapcopy, e.g. http://127.0.0.1:81/mapcopy).
Retrofit	Designation for a subsequent installation (e.g. telephone), a new system is adapted to the vehicle's complete electrical system. For complete implementation of retrofitting, the vehicle must go to sleep.
Native action plan	Shown after successfully determining target context. All actions are displayed that are initiated by ISTA/P (e.g. update integration level). Comparable to status report in Progman.
Standard action plan	This action plan is used as standard. It can contain logistic actions (e.g. updating the integration level), small repair measures and added actions (e.g. conversion).
Personal Profile	In certain vehicles, this is the new designation for "Car & Key Memory". Settings are made directly in the vehicle. Only settings which are difficult for the customer to grasp (e.g. tilt sensor ON/OFF) will continue to be made in ISTA/P in the Conversions menu. In F-, G-, and I-series vehicles (vehicle electrical system 2020), the user profile can be exported (backed up) via the USB import/export port in the glove box.

Programming	Loads a new program to the control unit. Former designation "flash programming".
Programming status	Indicates the status of the control unit as a number.
Service function	Service functions are executed within the framework of post-programming or immediate actions. Examples of available post programming initialisation: • Compressor run-in protection, • Initialisation of power window regulator, • Adjustment of lateral acceleration sensor Example of available immediate actions: • Delete transport mode.
SGC	Control unit coding
Software ID	Software identification feature
Target context	Software version of the vehicle which is allocated by the programming system. The native action plan is shown after successfully determining target context.
Special measure	A special action is a repair measure that cannot be carried out together with the logistic actions. They normally establish preconditions to enable more efficient logistic actions to be determined. They are alternatives to logistic actions.
Special-action plan	The special action plan is an alternative to the standard action plan. It contains special actions and/or mandatory actions.
SWT	Sweeping Technology The enabling code generates a functional enhancement in the vehicle. The background to this is so-called sweeping technology . The enabling code is encrypted in the control unit.
Replacement follow-up	Follow-up work on a control unit after replacement..
Trace or log file	Within an ISTA/P session, traces (summaries of the programming procedure) are created. At the end of each ISTA/P session, the traces are compressed and automatically stored on the ISSS or ISPS as a Trace archive (ZIP file).

Conversion	Changes individual functions in a control unit (e.g. the language). For complete implementation of a conversion, the vehicle must go to sleep.
WSM	Workshop System Management Used to manage the ISIS. All administrative tasks are executed here.
ZCS	For central encoding key, see vehicle order
Assembly number	Hardware number, program version and data version together give the assembly number.
Mandatory measure	A mandatory action is an action that places the vehicle in a treatable state. It is to be carried out within a special measures plan and is obligatory.