User Documentation.

Version V2.31.1

Programming System Integrated Service Technical Application Programming (ISTA/P).

BMW Group

www.bmwicom.net

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ISTA/P User Documentation BMW, MINI and Rolls-Royce

Changes to ISTA/P and the user documentation

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

Software medium	Version
ISTA/P (DVD)	V2.31.1
ISSS Basic (DVD)	V2.6.0
ISIS Update (DVD)	V2.6.0
BMW Navigation (CD)	31.0 (part number 01 59 0 141 891, index u)
SWT (enable code) (DVD)	1.1 (part number 01 99 0 036 166)

The F01 and F02 represent a new generation of vehicles that not only feature new functions but are also equipped with a new control module architecture and a new system network structure (BN2020).
The previous programming system Progman has been replaced by ISTA/P. In addition to containing the complete scope of vehicle programming, ISTA/P also features new functions, making it well equipped to effectively meet future vehicle programming requirements in service applications.
Compared to Progman, the introduction of ISTA/P has given rise to the following new features:

- Configurable measures plan with graphic and tabular representation
- Detailed display of control module status
- Entry of enable codes/vehicle orders from any point in the workshop with access to the workshop information system/ISTA/P
- Subsequent expansion and adaptation of measures plan
- Generation of control module order list whenever hardware needs to be replaced
- Interruption of a session if spare parts are not available
- Display of last Progman or ISTA/P version with which the vehicle was programmed.

General information on ISTA/P

The ISTA/P programming system is an ISPI application and stands for Integrated Service Technical Application/Programming. ISTA/P is used to process all coded, programmed and enable-dependent control modules in BMW Group vehicles.

Important note:

Vehicle programming/coding is permitted only when:

- A test module in the ISTA workshop system requests programming
- A BMW-approved fault elimination measure requests vehicle programming
- Retrofitting or conversion are required
- Required as part of a technical campaign
- Control modules need to be replaced.

The ISTA/P start page provides an overview of the number of current programming sessions and the progress of updates.

User information

After ISTA/P has been installed, this user documentation explains how this system is used in the vehicle programming procedure in the workshop. This handbook describes the fundamental functions of ISTA/P.

Knowledge of how ISPI components interact in the workshop network is of central importance when working with ISTA/P. Detailed information on each individual system and on network issues can be found in the respective handbooks:

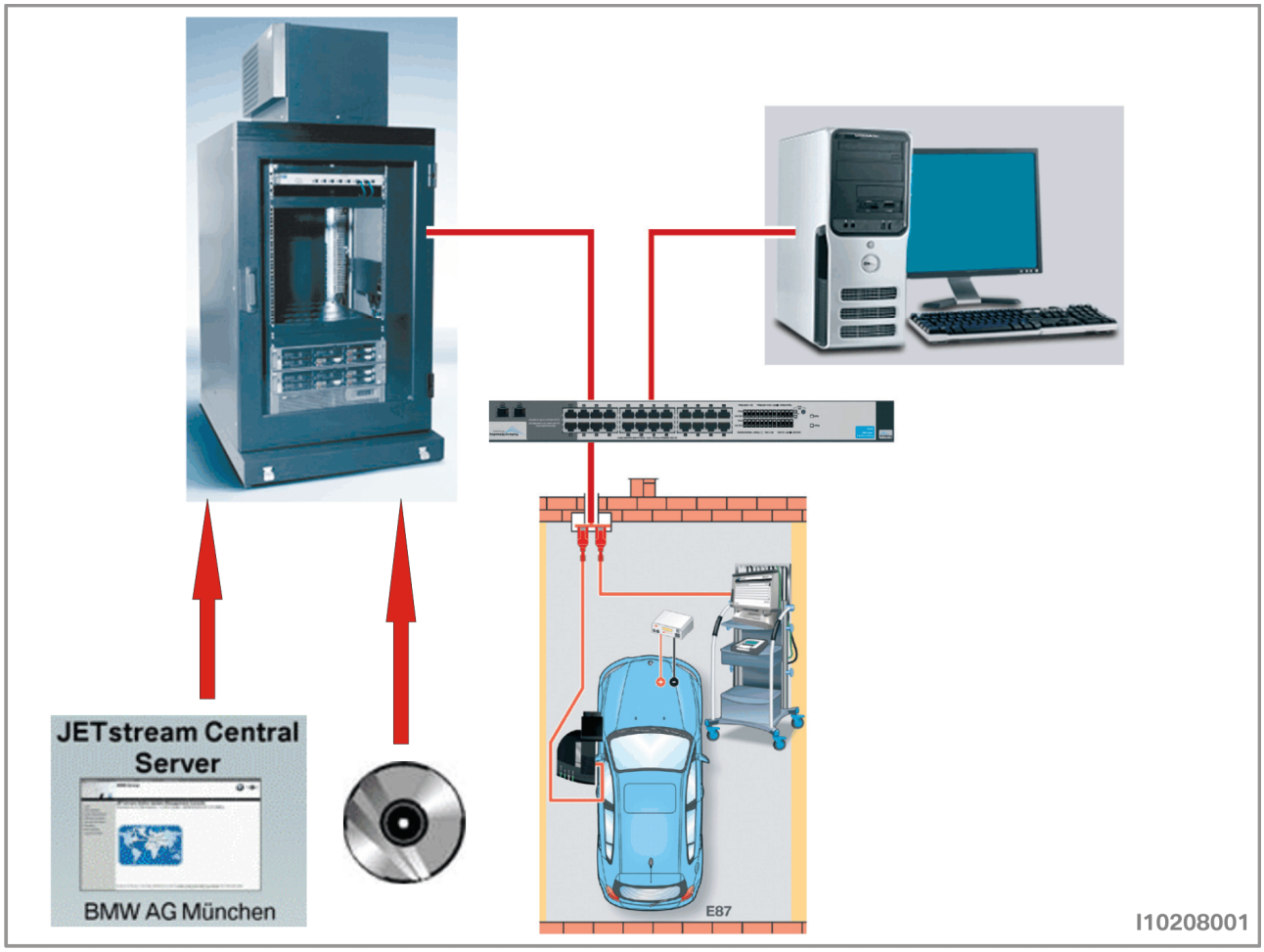
ISTA	User instructions
ISIS	User documentation
ICOM	Vehicle interface handbook
ISPA	Technical administrator handbook
ISID	Device description handbook
WSM	User guide

The handbooks are available on the current version of the "Documentation DVD".

The SSS becomes an ISSS by installing SSS Basic (DVD) via the DVD drive of the SSS. A screen must be connected during the installation procedure. The ISTA/P data DVD is installed on the ISIS level.

The ISTA/P application is resident in the ISSS.

The ISSS is integrated in the system network of the ISIS. Updates take place via JETstream or DVD on the ISIS.



Installation for using ISTA/P

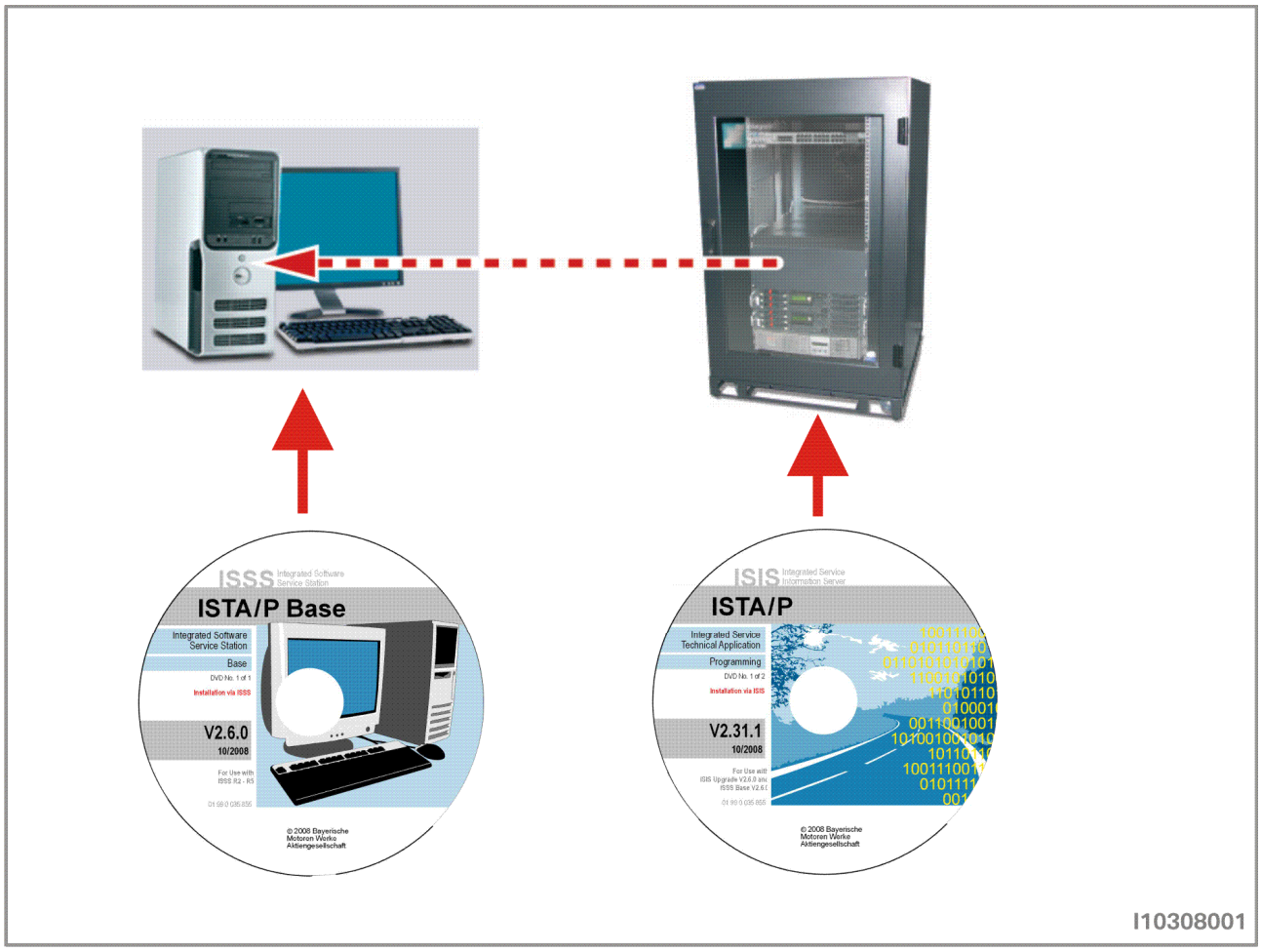
The following steps must be performed as part of the installation of the ISSS Basic DVD:

User action	Result
Switch on ISSS.	
Load current ISSS Basic DVD in the DVD drive.	
Switch ISSS off and back on again.	
	Basic installation then runs automatically.
	After a short time, the following message appears: "Basic DVD installation in progress. This will take approx. 20 minutes."
	The DVD drive opens automatically.
	The message appears: "Please remove Basic DVD and close tray."
Remove the Basic DVD from the DVD drive and close again.	
	The system will restart on completion of the basic installation procedure.

Following basic installation, the ISSS must again be logged on to the ISIS and registered. Overall system administration takes place directly via WSM. Please refer to the WSM User Guide for further information on installation and administration.

Note:

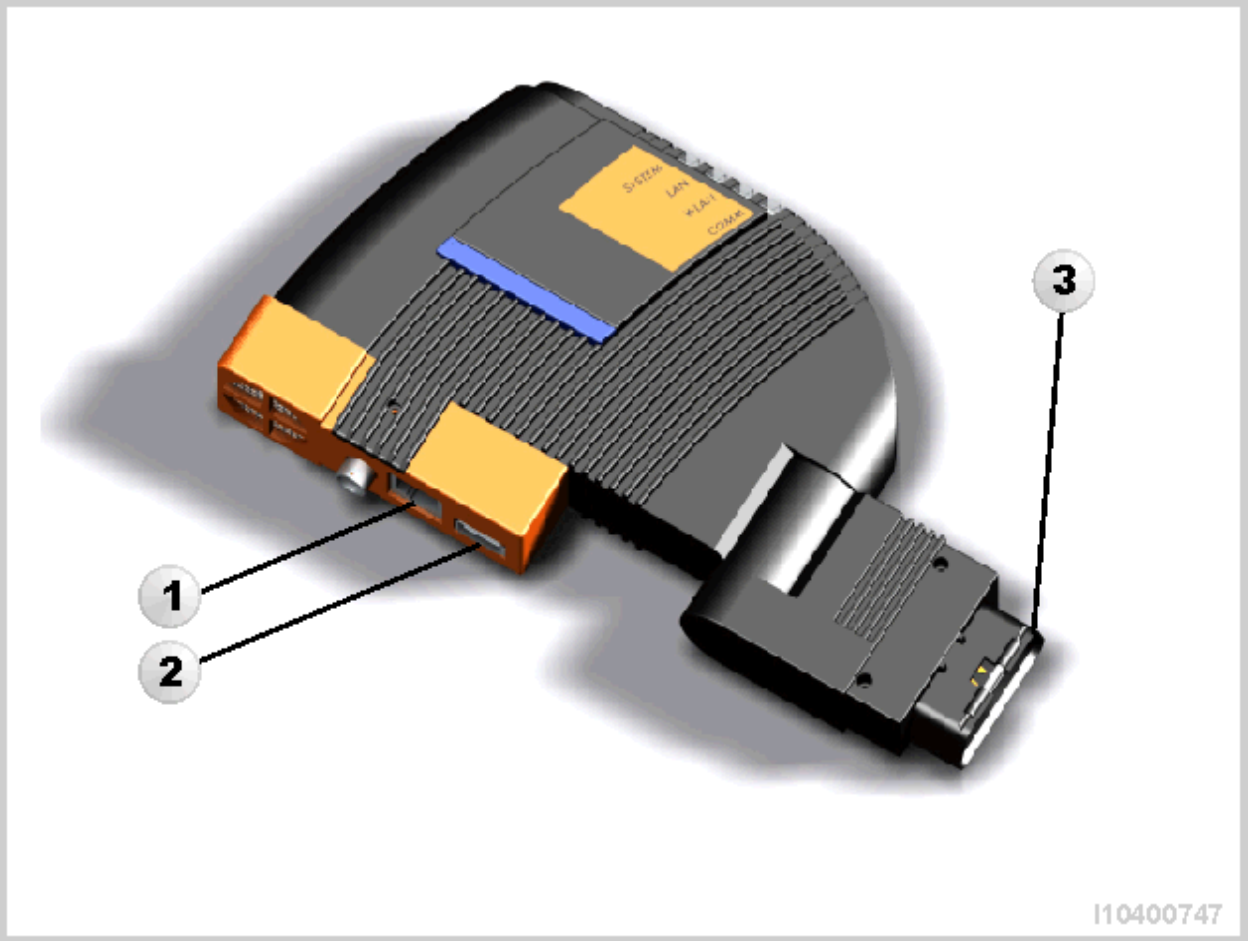
For ISTA/P to be used, the version of the basic installation on ISSS and the version of the ISTA/P DVD must be mutually compatible. Each new ISTA/P DVD contains a reference to basic installation requirements.



ICOM (Integrated Communication Optical Module)

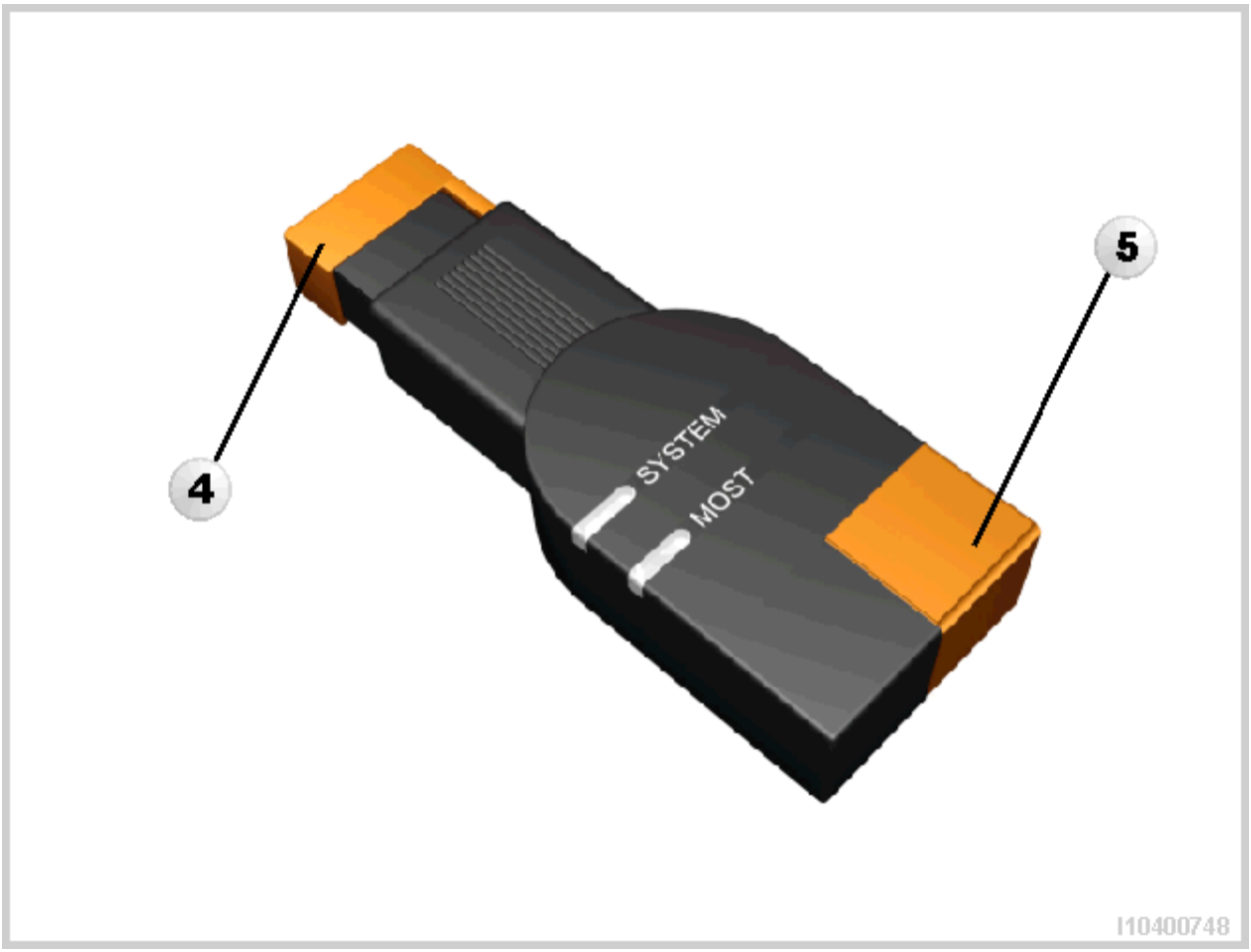
The ICOM is the data interface to the vehicle and is the successor to OPS (Optical Programming System) and OPPS (Optical Testing and Programming System). OPS and OPPS are not supported by ISTA/P. Three different ICOM interfaces are available, with which all BMW Group vehicles can be processed.

ICOM A



Index	Description
1	Network connection
2	USB port
3	OBD connector

ICOM B



Index	Description
4	MOST connector
5	USB port

ICOM C

Index	Description
6	Connector for OBD port
7	Diagnosis head connector

Connecting ICOM to OBD socket
Plug the OBD connector on the ICOM A into the OBD socket on the vehicle. Then connect the ICOM A to the workshop network using the network connector. The OBD connector on the ICOM A can be angled, allowing it to be adjusted for OBD sockets at different installation locations in the vehicle.

Using ICOM at MOST direct access port
Also use the ICOM B module to connect the ICOM to the vehicle MOST direct access port. For this purpose, connect the USB ports of ICOM A and of ICOM B with the USB cable. Then connect ICOM A to the workshop network via the network connector. Connect ICOM B via the MOST connector to the MOST direct access port of the vehicle and plug the OBD connector of ICOM A into the OBD socket on the vehicle.
Repeat the procedure if the MOST connection or ICOM is not recognized.

Using ICOM at 20-pin diagnosis plug
Use the ICOM C module to connect the ICOM to the 20-pin diagnosis plug on the vehicle. For this purpose, plug the OBD connector into the OBD port on the ICOM A and connect the diagnosis head connector to the 20-pin diagnosis plug on the vehicle.

Preparing vehicle programming and finishing off

The basic requirement for efficient programming is that the vehicle is correctly prepared.

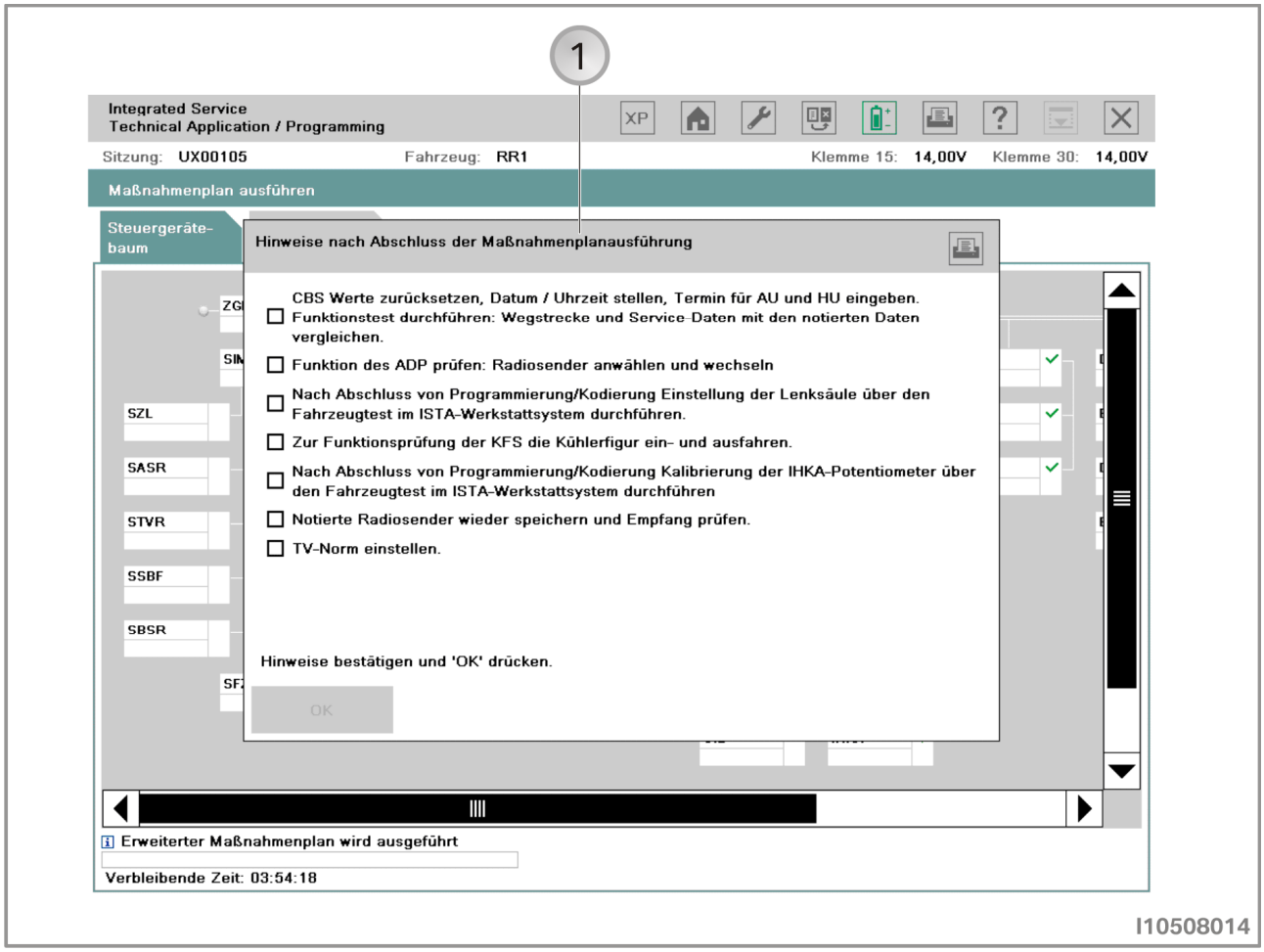
Preparations:

- Park vehicle on flat and even ground
- Wherever possible, protect vehicle from direct sunlight
- Turn off engine
- Shift manual transmission to Neutral or automatic transmission to Park.
- Activate electromechanical parking brake or apply parking brake
- Make sure that the temperature of the transmission fluid is between -40 °C (-40 °F) and 85 °C (185 °F)
- Switch off all electric loads, lights and turn signal lamps
- Switch off wiper/washer system. The wipers may be actuated during programming and initialization. Make sure that the wipers can move freely
- Make a note of all stored radio and TV frequencies as well as the navigation destinations
- Connect up a BMW Group-approved battery charger in the engine compartment. The battery charger connected during programming must be run in "external power supply mode with battery connected". Please refer to the operating instructions for the battery charger
- Do not connect or disconnect the battery charger during programming. Low system voltage may cause programming to cancel. Make sure that the vehicle system voltage does not drop below 13.0 volts while programming is in progress
- Set up connection between workshop network, vehicle interface and vehicle
- Check cable routing. Cables routed through open windows could be damaged when the windows are started automatically. Do not route cables through open windows
- Switch on ignition (terminal 15)
  - On vehicles with Comfort Access, the identification transmitter must be inserted in the ignition lock. The coding procedure may be terminated if the identification transmitter is not inserted in the ignition lock.
  - If the vehicle model does not have an ignition lock, the identification transmitter must be located in the vehicle interior.
  - On vehicles with automatic terminal 15 shutdown (as from 03/2007) the signal from the door contact switches off terminal 15 by opening and closing the driver's door. Terminal 15 is permanently switched on by pressing the START-STOP button. Make sure that the driver's door contact is not operated during the programming procedure.
- Perform a vehicle test with the ISTA workshop system to make sure that all installed control modules respond and any fault memory entries are read out
- Before programming, rectify any faults that may be present and delete any fault codes stored
- Determine CBS data, note down and end ISTA workshop system
- Preparations: Remove inserted data media (DVD) and disconnect connected data (iPod®, etc.). Data media in a drive or still connected could cause programming to abort
- Before starting vehicle programming, make sure the boot lid is closed (to prevent the luggage compartment lighting from overheating).

During programming:

- Observe and follow requests and instructions in ISTA/P
- Leave ignition switched on and follow instructions in ISTA/P (e.g. CAS)
- Do not cut the connection between workshop network, vehicle interface and vehicle
- Close the boot lid again after any action in the luggage compartment (e.g. loading/removing navigation DVD) to prevent the luggage compartment lighting from overheating
- During programming, perform no other activities on/in the vehicle than those instructed by ISTA/P.

Finishing off:

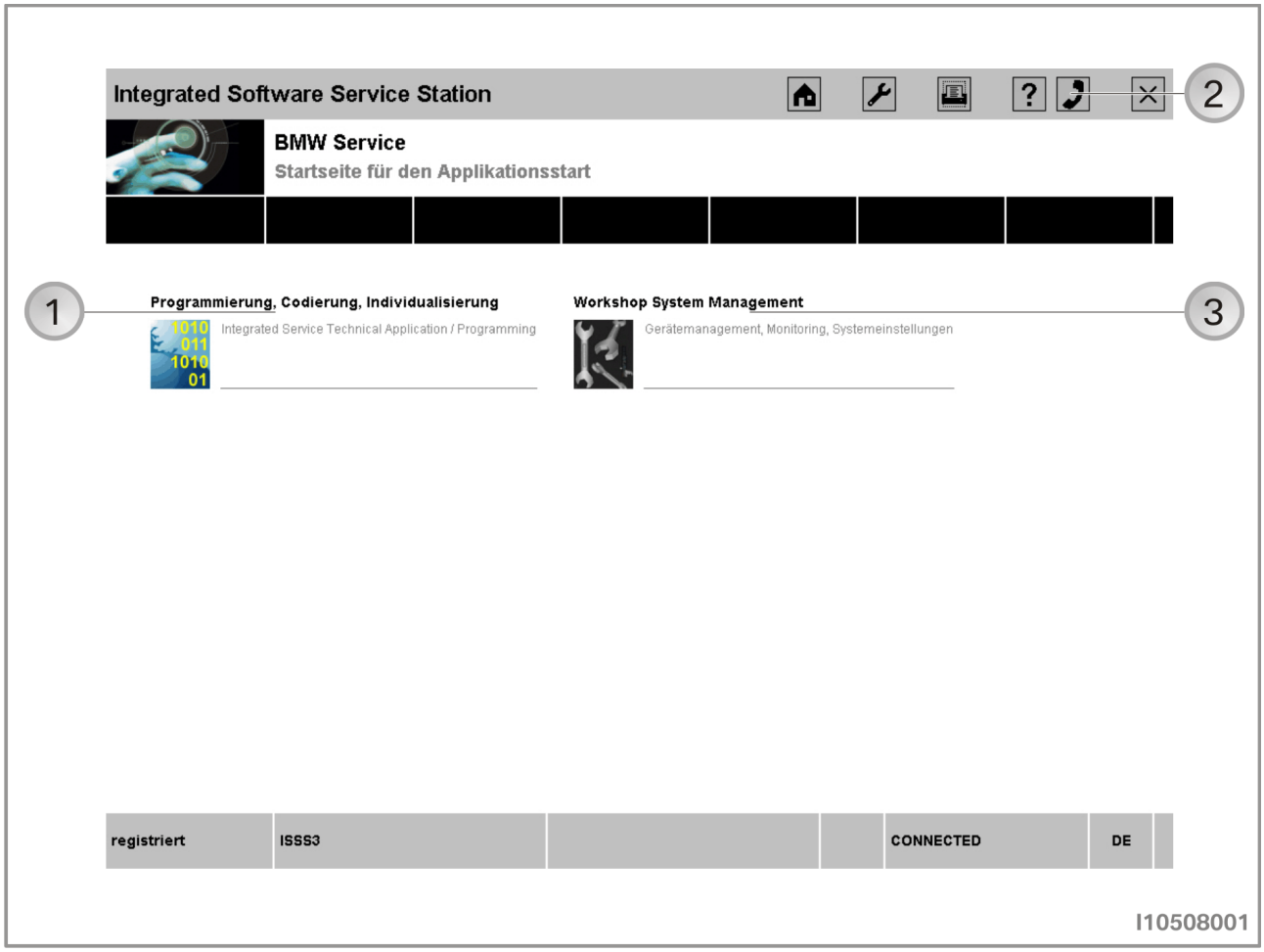


Index	Screen element
1	Execute procedure for finishing off the measures plan and confirm by clicking "OK"

- If an ICOM is connected to the MOST direct access port, disconnect the MOST direct access port when requested to do so by the ISTA/P system, remove the ICOM from the MOST ring and close the MOST ring with the original flash plug (bridge) in the vehicle. Fault codes may be entered and MOST control modules may be registered incorrectly if the ICOM is not correctly disconnected from the MOST direct access port.
- Perform the finishing off procedures such as calibration, initialization, service functions etc. in the vehicle test in the ISTA workshop system as defined in the final report. Confirm the finishing off jobs individually.
- Enter the time and date information to ensure correct calculation of the CBS values in the vehicle.
- After programming, reinstall all removed or disconnected data media (DVD, iPod®, etc.) and check.
- Compare the previously printed or noted CBS data of the control modules and, if necessary, reset and correct as part of the vehicle test in the ISTA workshop system.

- Perform vehicle test with the ISTA workshop system and end vehicle test on completion.
- Park vehicle for at least 5 minutes (BN2000 and BN2020 vehicles) or 16 minutes (I-bus vehicle) with terminal R OFF so that all control modules can assume sleep mode, i.e. assume the rest state.
  Note: control modules that do not assume sleep mode (rest state) can cause closed-circuit current faults!
- Make sure that the vehicle is OK.
- Check all noted radio and TV frequencies as well as navigation destinations and store manually if necessary.

Starting an ISTA/P session



Index	Screen element	Index	Screen element
1	ISTA/P button	2	Callback Assistant button
3	Workshop System Management (WSM) button		

Start ISTA/P from the ISSS jumpgate by selecting "Programming, Coding, Individualization".

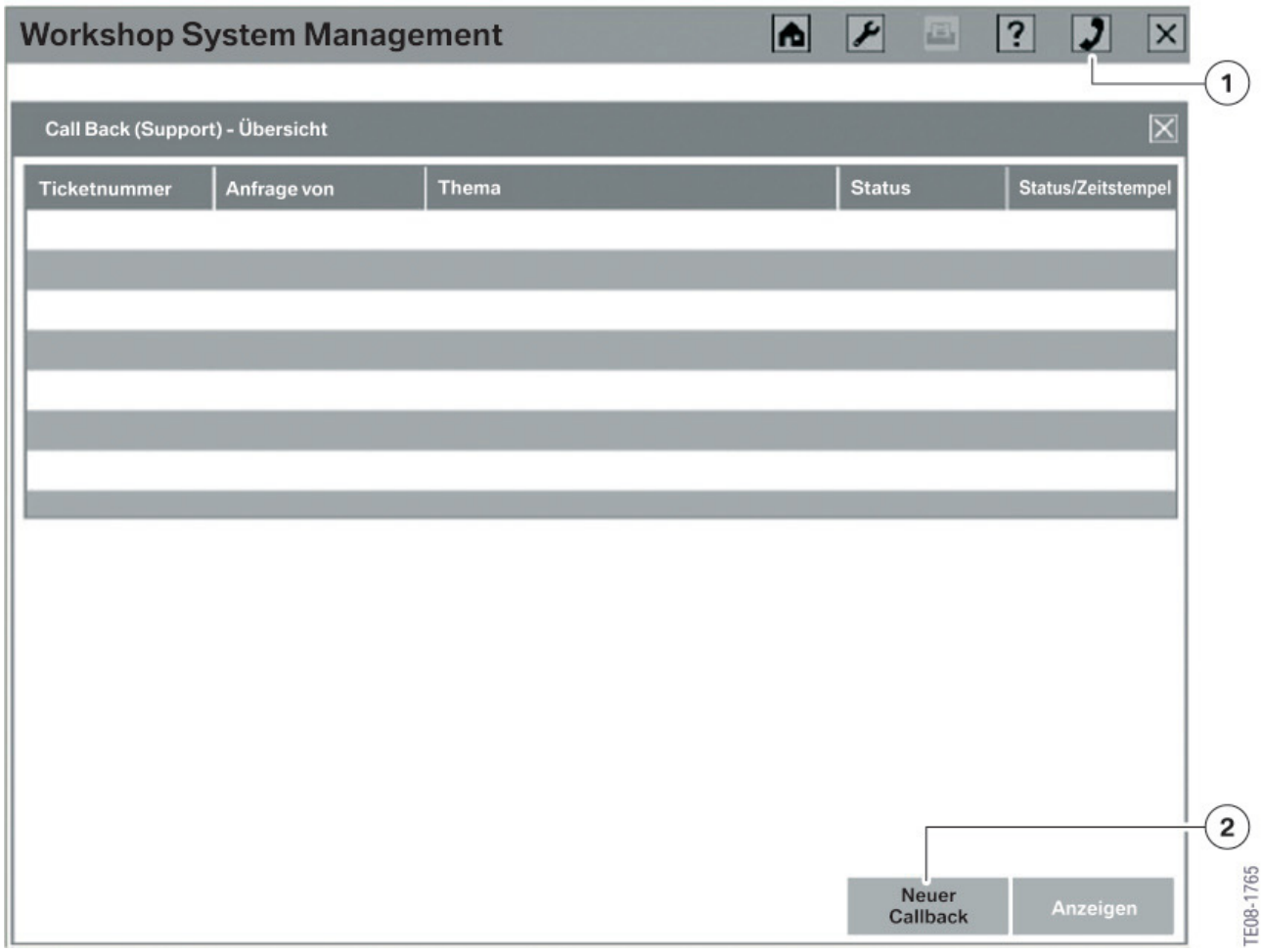
A maximum of three vehicles or one model series F01/F02 vehicle can be programmed and encoded with ISTA/P on an ISSS.

Note:

The basic requirement for efficient programming is that the vehicle is correctly prepared. When programming and coding, refer to the documentation "Preparing vehicle programming and finishing off".

Callback Assistant

The Callback function in the workshop system management of the ISIS is to be used if problems relating to the infrastructure of the IT system occur (e.g. ICOM connection not possible) in the applications or during programming. The Callback function is a user-prompted callback form. You will find a detailed description with instructions in the WSM User Guide.



Index	Screen element	Index	Screen element
1	Callback Assistant button	2	"New callback" button, for creating a new case

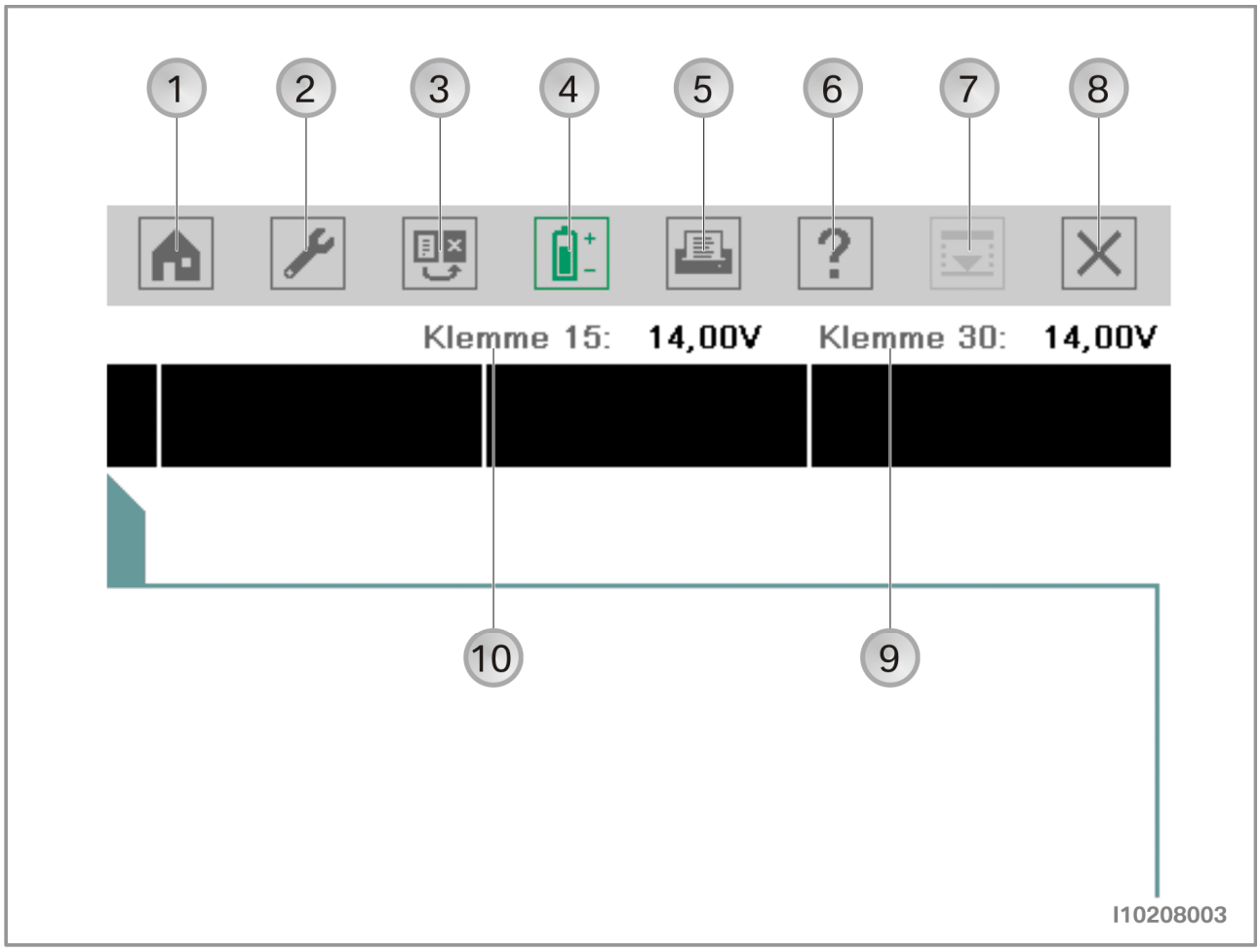
Procedure if programming is terminated

Follow the instructions given in the programming system if the programming or coding procedure is terminated during a programming session.

Contact Technical Support if the disruption in programming and coding relate to the vehicle and cannot be solved in the workshop.

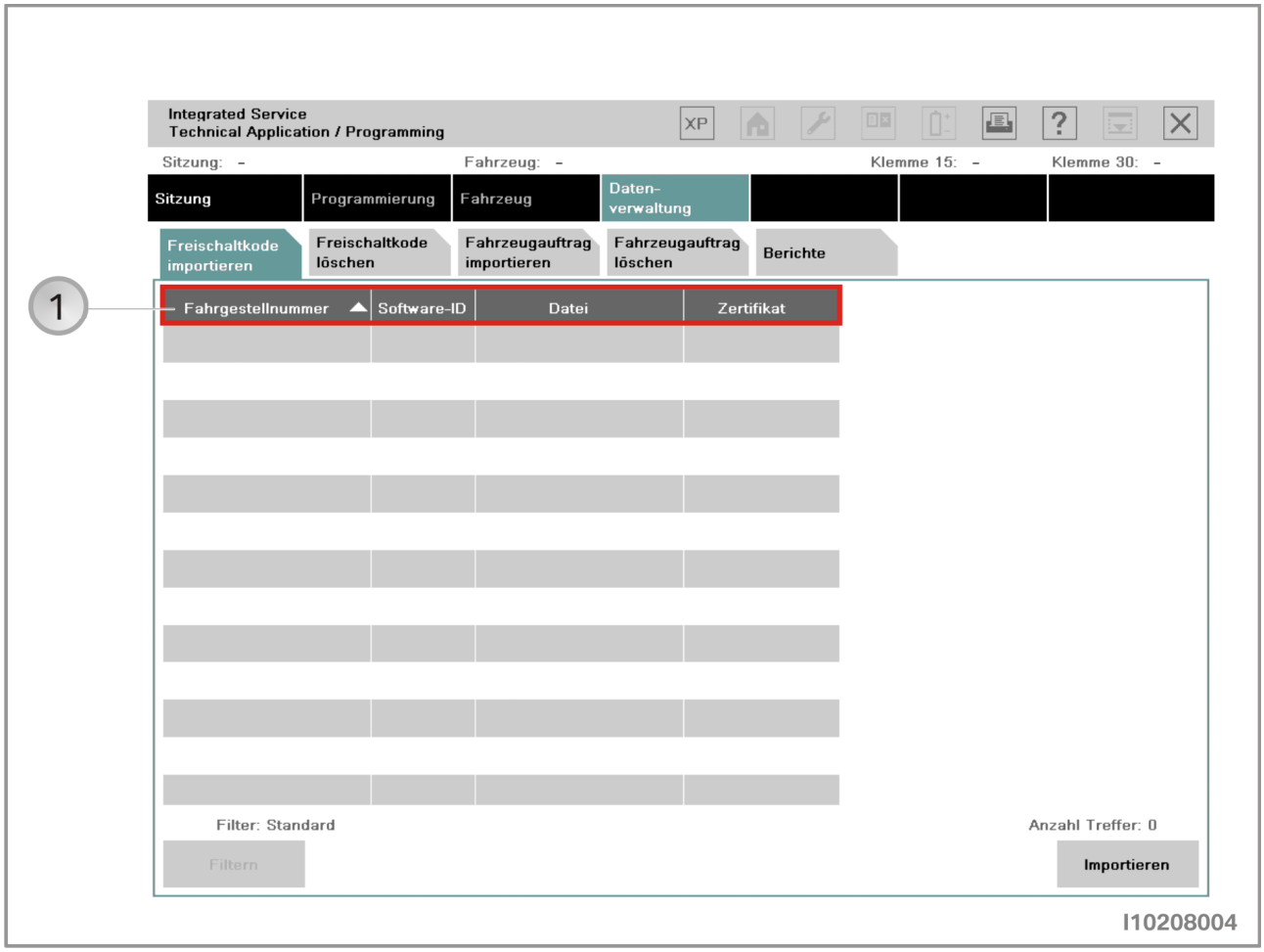
Menu bar and voltage display

Functions and actions can be selected directly in the menu bar. The voltage of the connected vehicle is displayed below the menu bar:



Index	Screen element	Index	Screen element
1	Change to "Session" menu (ISTA/P start screen)	2	Change to "Administration" menu
3	Change to "Connection manager"	4	Battery charge status is shown in percent (only ISID)
5	Print	6	Help function for ISTA/P
7	Minimize application	8	Close application
9	Terminal 30 in volts	10	Terminal 15 in volts

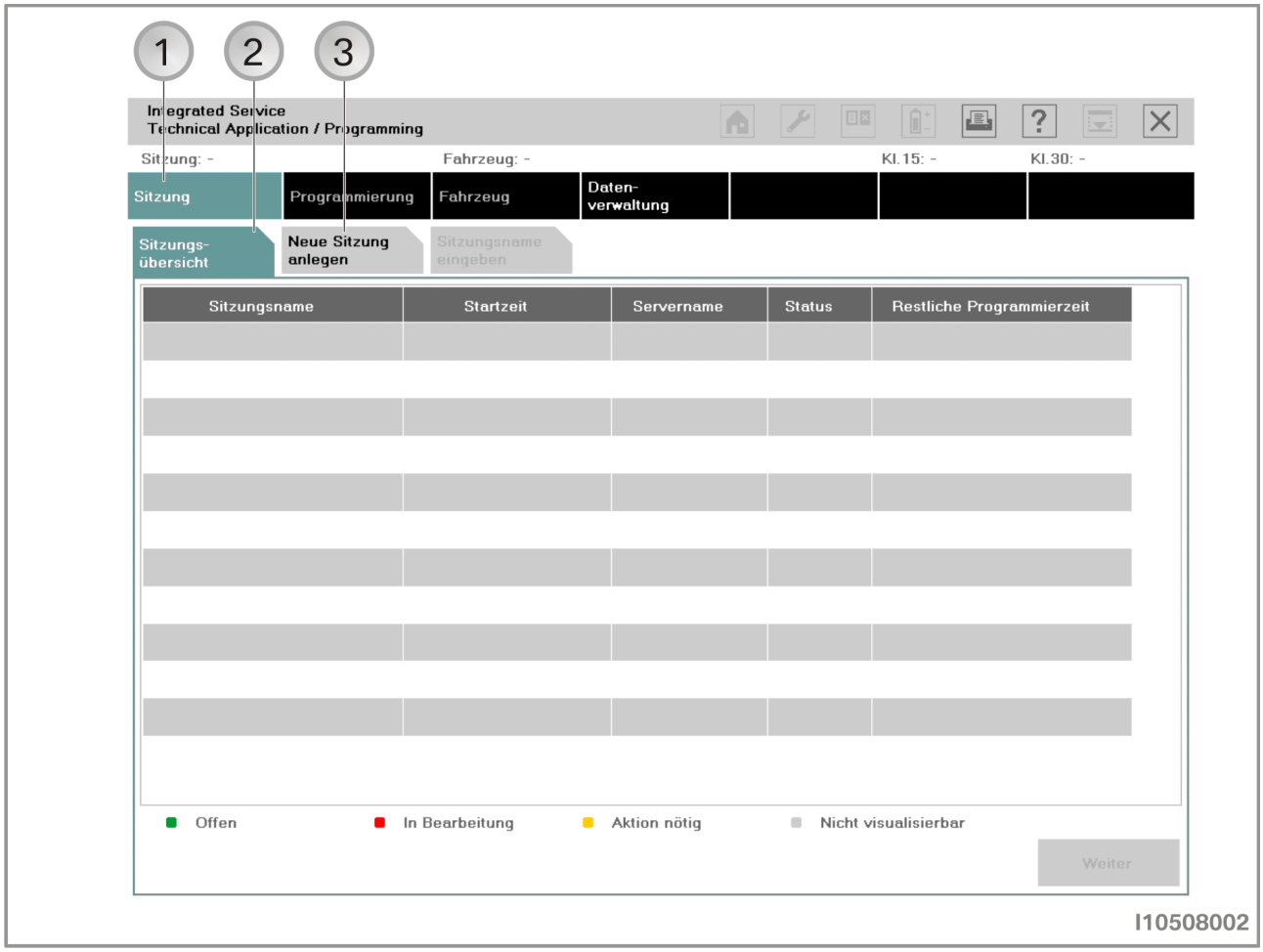
Sorting selection list



Index	Screen element
1	Column headings, showing "Data management" menu as an example

The selection list can be sorted in ascending or descending order by clicking on a heading of a column that can be sorted.
Sorting is indicated by a white triangle pointing up or down. Columns that can be sorted are: e.g. "Session name", "Start time", "Server" or "VIN".

New session (ISTA/P start screen)

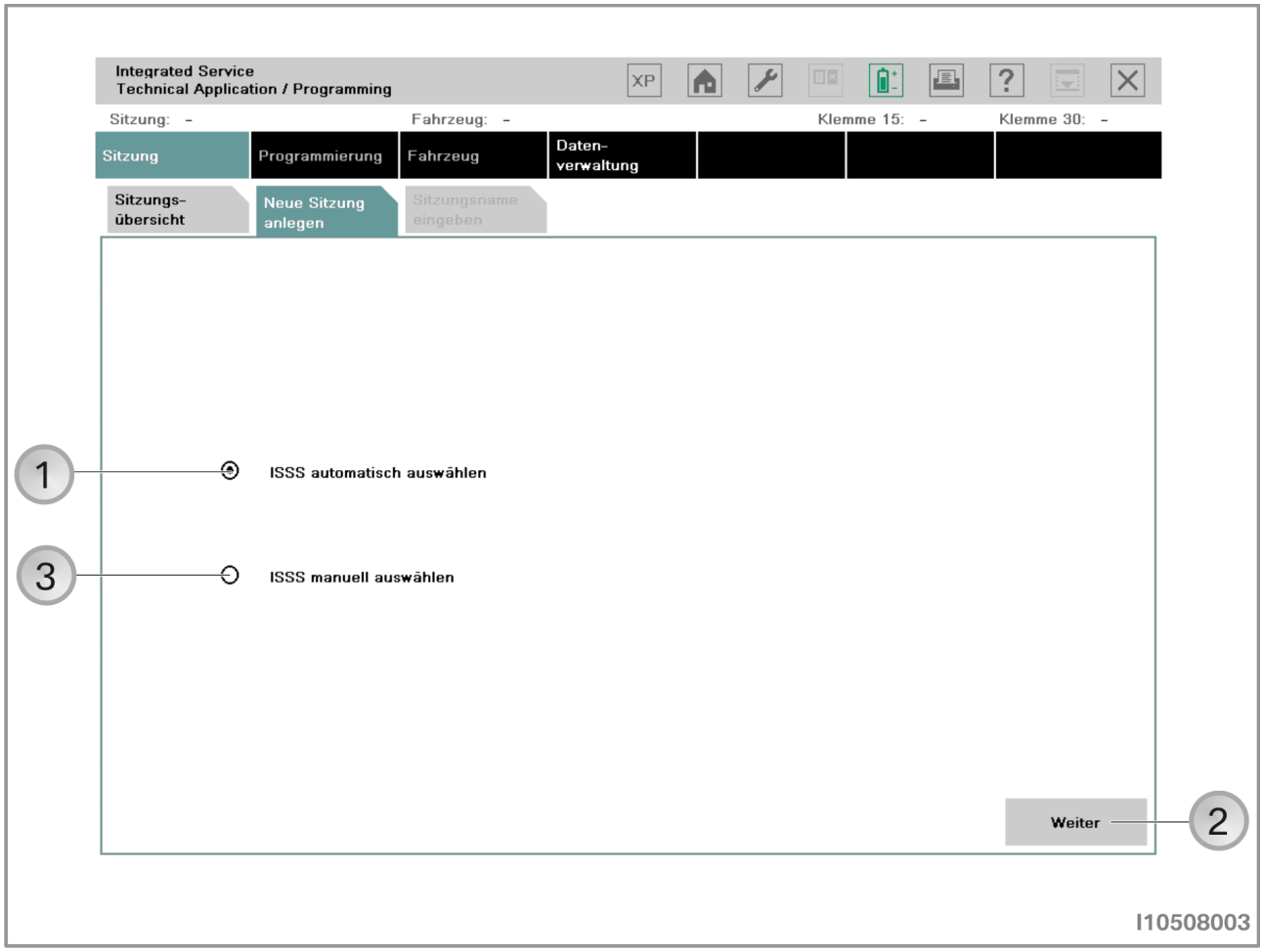


Index	Screen element	Index	Screen element
1	"Session" menu	2	"Session overview" tab
3	"Create new session" tab		

All sessions that are currently running are shown in the session overview of the ISTA/P start screen. The session overview can be selected at any time by clicking on the "Session" menu button. Existing sessions can be adopted selecting from the session overview and clicking on the "Continue" button.

A new program session is started via the "Create new session" tab.

Selecting programming system (ISSS) automatically/manually:

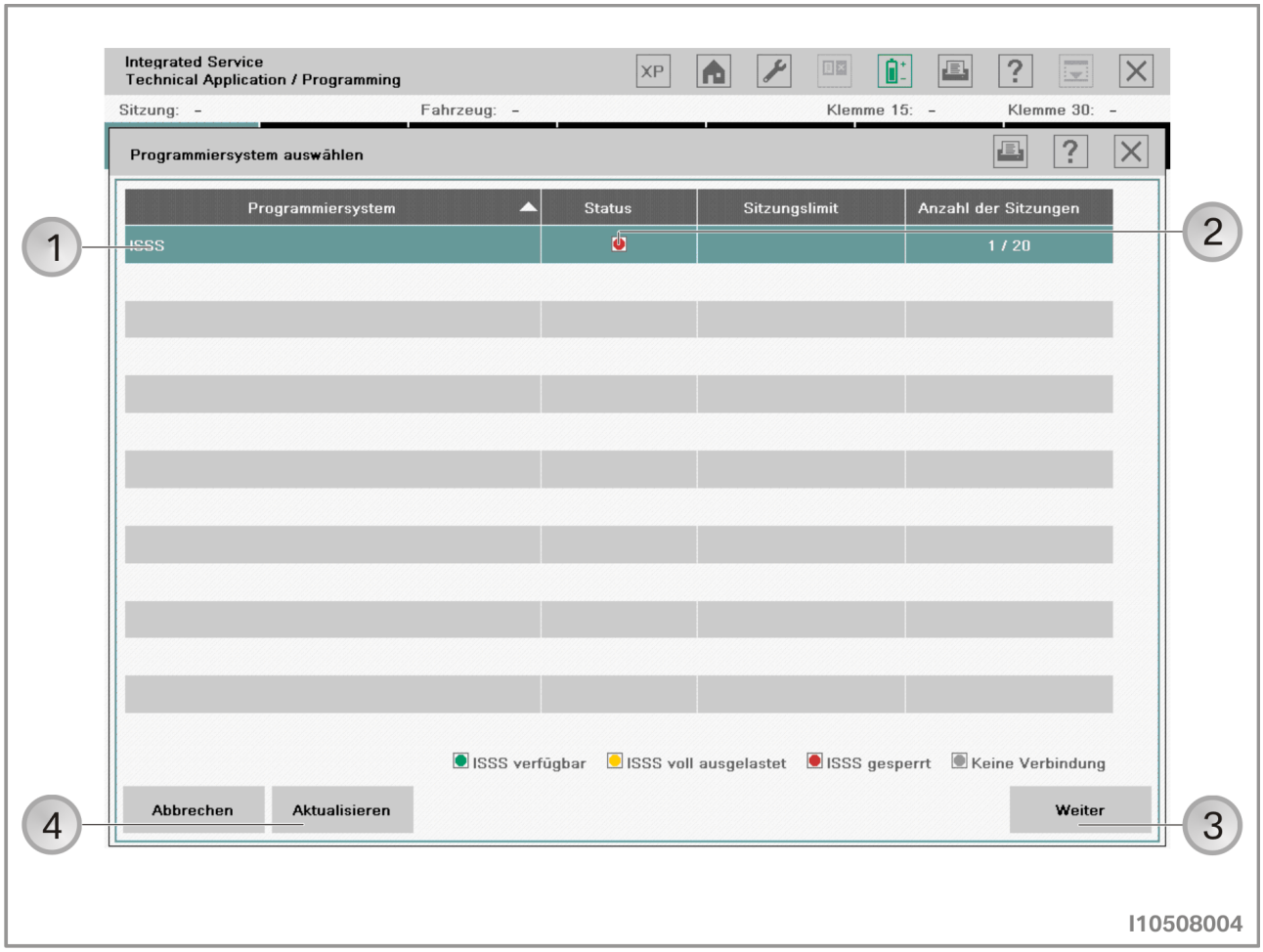


Index	Screen element	Index	Screen element
1	Select ISSS automatically	2	"Continue" button confirms selection
3	Select ISSS manually		

If "Select ISSS automatically" is selected, the programming system (ISSS) with the lowest number of current programming sessions is selected automatically. If there are several programming systems with the same number of programming sessions, any programming system is selected automatically.

The programming system must be selected manually if "Select ISSS manually" is selected.

Selecting programming system (manual session selection):



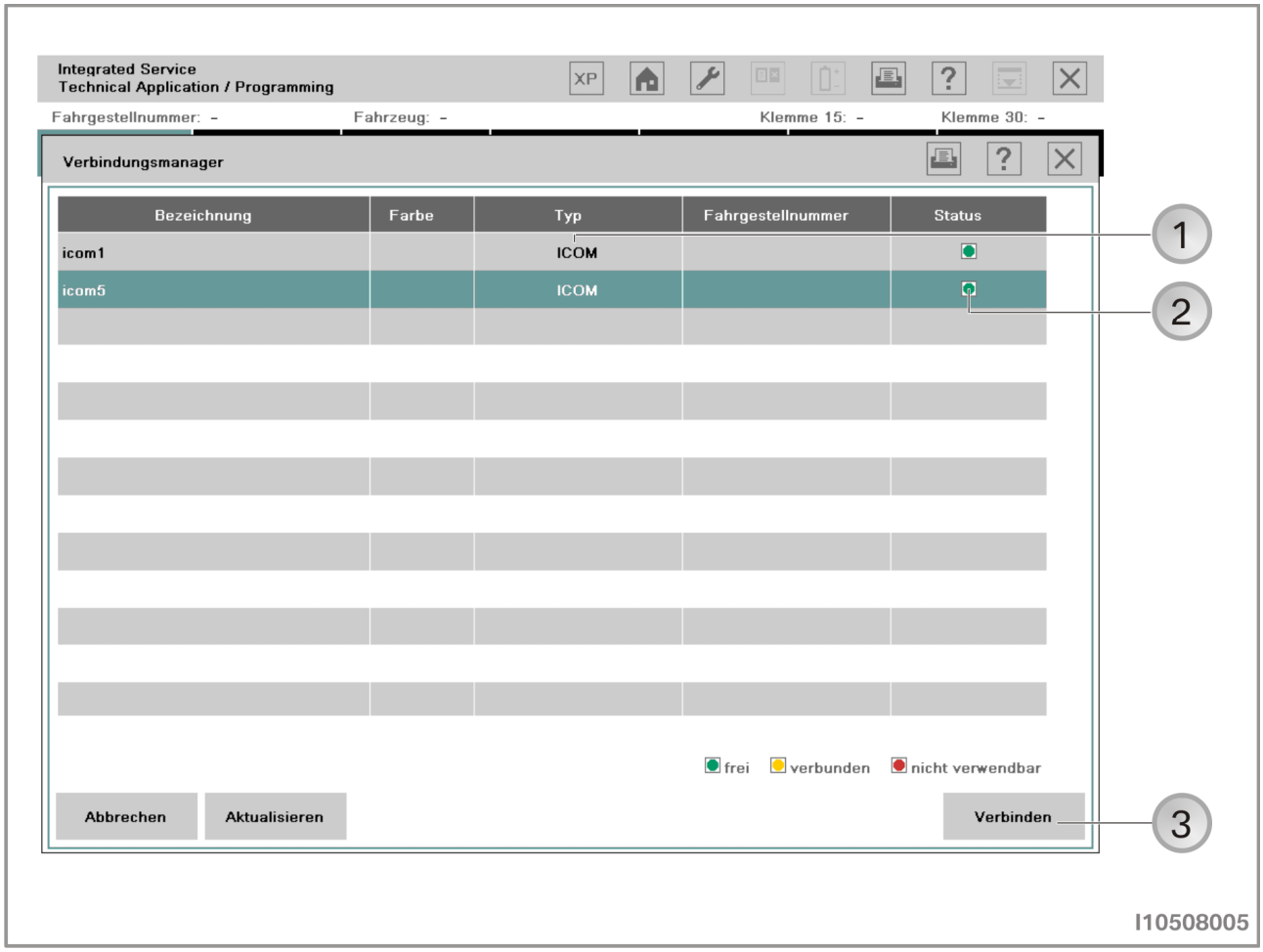
Index	Screen element	Index	Screen element
1	Display of detected programming systems (ISSS)	2	Status of programming system
3	"Continue" button	4	Update Renewed check of connected programming systems

The detected programming systems (ISSS) are shown together with their status.

Color	Status	Color	Status
Green	ISSS available	Red	ISSS blocked
Yellow	ISSS running at full capacity	Gray	No connection to ISSS

Select an available programming system and confirm by clicking on the "Continue" button.

Connection manager:



Index	Screen element	Index	Screen element
1	Type of interface	2	Interface status
3	"Connect" button		

The detected interfaces (ICOM) are shown together with their status.

Color	Status	Color	Status
Green	Interface free	Red	Interface cannot be used
Yellow	Interface connected		

Select a free interface from the list. Click the "Connect" button after selecting the interface.

The vehicle order or central coding key is read out. Refer to the document "ISTA/P Data Management" if the vehicle order or central coding key cannot be read out.

Refer to the vehicle-specific sections "Vehicle Programming and Coding Procedure" for further information on vehicle programming and coding.

Retrofitting and conversions

Individual retrofits for the model series will only be offered by ISTA/P if they are actually possible. This prevents incorrect programming of control modules. If the retrofit is not offered by ISTA/P by mistake, please consult Technical Parts Support via the ASAP Portal.

Note:

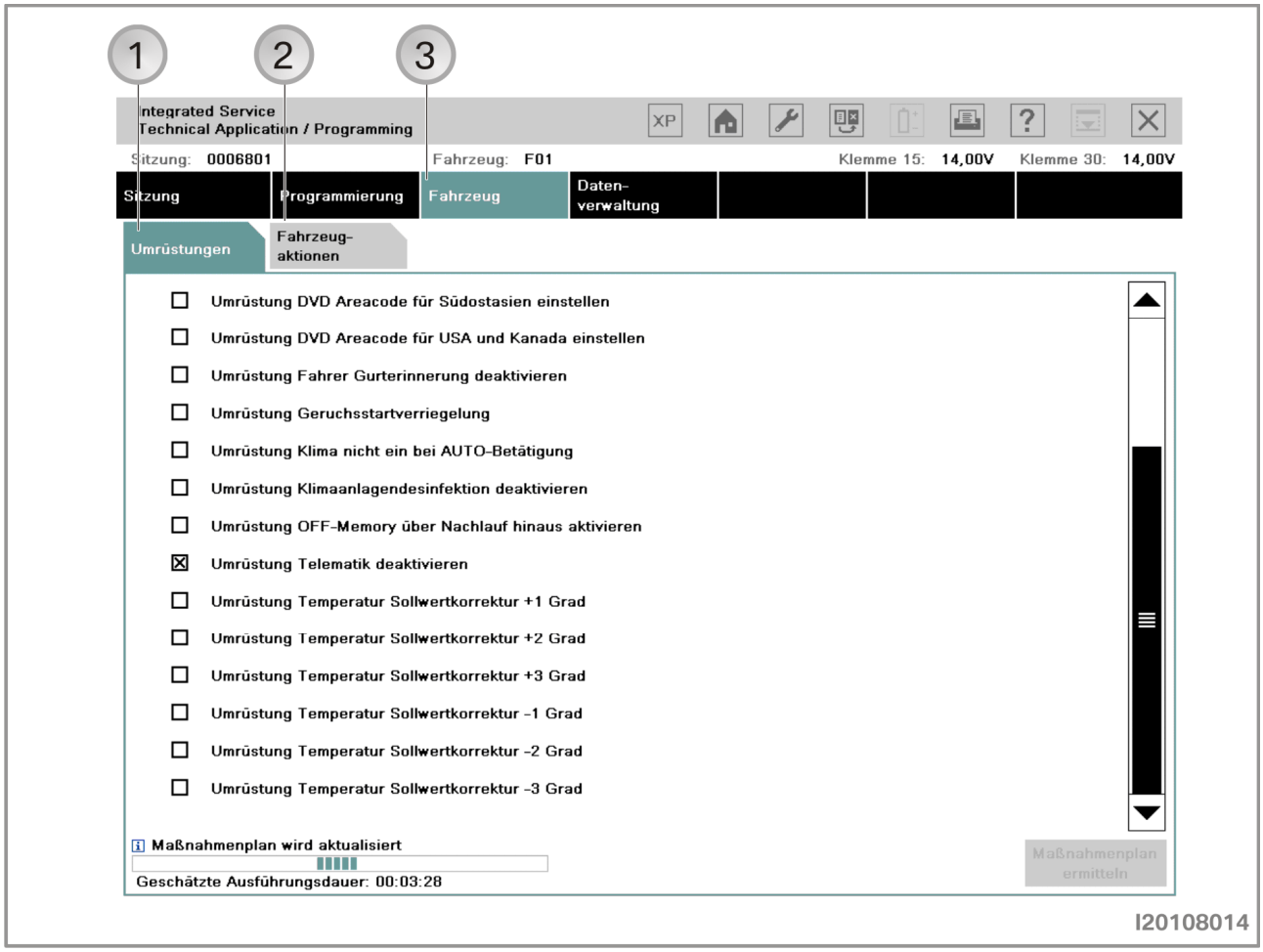
The items displayed in ISTA/P may differ, depending on equipment fitted and national market specification.

Only the items specified in the Electronic Parts Catalogue (Group EPC) are approved for retrofitting.
Explanatory notes about individual retrofits and conversions available in ISTA/P will be supplied by Technical Support as part of the fault elimination measures.

Procedure for retrofitting or conversion of systems requiring programming or encoding:

- Read out vehicle data with ISTA/P and determine measures plan. See Section: Starting new session with ISTA/P, select "Vehicle" tab.
- Select "Conversions".
- Select retrofit or modification system (e.g. "PDC").
- After selecting all retrofits or conversions, select "Determine measures plan".
- The selected retrofits or conversions are itemized in the action list.

Vehicle menu:



Index	Screen element	Index	Screen element
1	"Conversions" tab: The retrofits and conversions available for the vehicle are shown, see "Retrofits and conversions"	2	"Vehicle actions" tab: • Clear fault memory • Select complete coding • Start system time of all airbag control modules.
3	"Vehicle" menu		

The retrofits and conversions are listed under the "Conversions" tab in the "Vehicle" menu. All retrofits are shown first, followed by the possible conversions available for the connected vehicle.

Procedure for IBAC enable codes

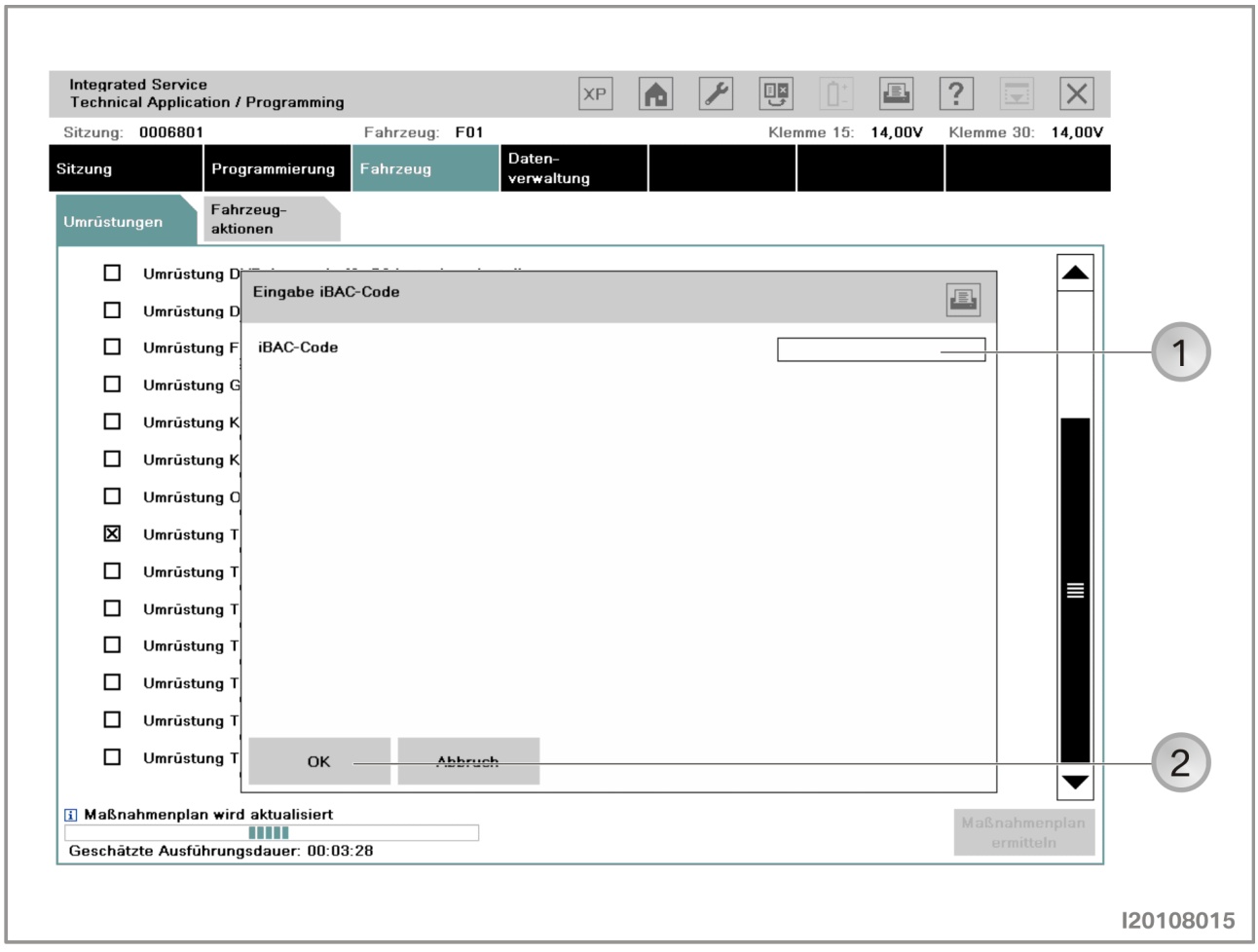
Some retrofits and conversions require the entry of IBAC enable codes. The IBAC enable code can be obtained from the respective subsidiaries (VG) or from the corresponding regional office and is valid for 30 days.

The following data are necessary to generate the IBAC enable code:

- IBAC order code (or selected retrofit or conversion)
- 7-digit vehicle identification number
- Your dealer number.

Note:

An up-to-date list of all IBAC order codes can be obtained from your subsidiary (VG) or your regional office. This provides you with the opportunity of ordering the required IBAC enable codes before working on the vehicle.



Index	Screen element	Index	Screen element
1	"IBAC enable code" input box	2	"OK" button

To enable the selected retrofit or conversion, enter the 15-character IBAC enable code in the input box and confirm with "OK". The entry must take into account upper/lower case letters.

E31, E32 and E34

Retrofit
Procedure for retrofitting systems requiring programming or coding in the model series E31, E32, E34:

- Read out vehicle data with ISTA/P.
  See Section: Starting new session with ISTA/P
  Select "Coding ZCS/FA"
- Select model series (e.g. "E34")
- Select "2 - Retrofit"
- Select system (e.g. "1 - Air conditioning system (IHKR II/III)")
- Start automatic encoding (confirm with "Y")
- Follow the instructions given by the user prompts.

Conversion
Procedure for conversion of systems relevant to programming or encoding:

- Read out vehicle data with ISTA/P.
  See Section: Starting new session with ISTA/P
  Select "Coding ZCS/FA"
- Select model series (e.g. "E34")
- Select "4 - Conversion".
- Select system (e.g. "1 - Antitheft alarm system")
- Select function (e.g. "2 - Visual alarm with hazard warning lights")
- Start automatic encoding (confirm with "Y")
- Follow the instructions given by the user prompts.

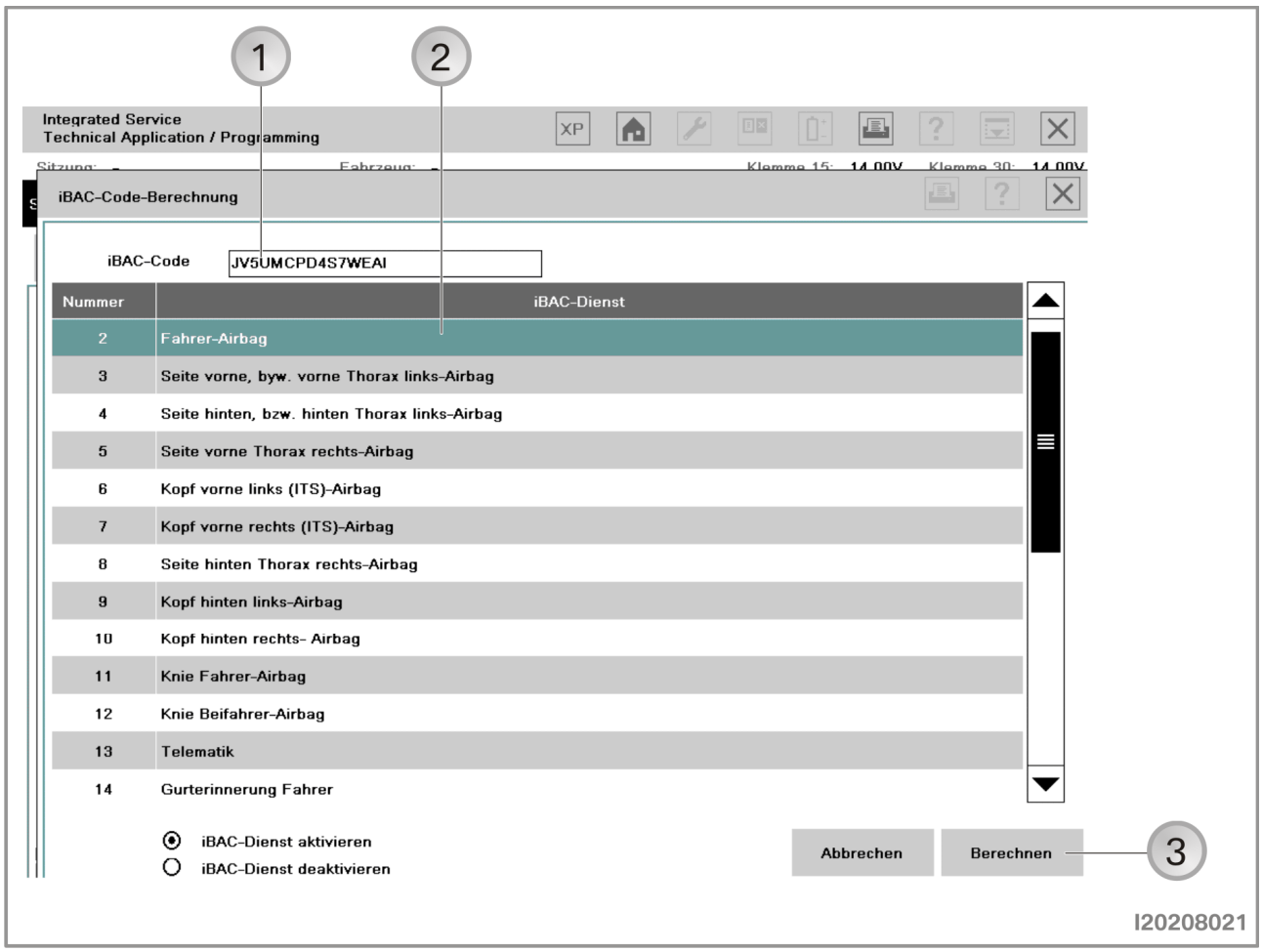
Note:

The central encoding key is not changed during the conversion procedure (see footnotes for exceptions) so that the corresponding control module is recoded to the basic status when newly encoded.

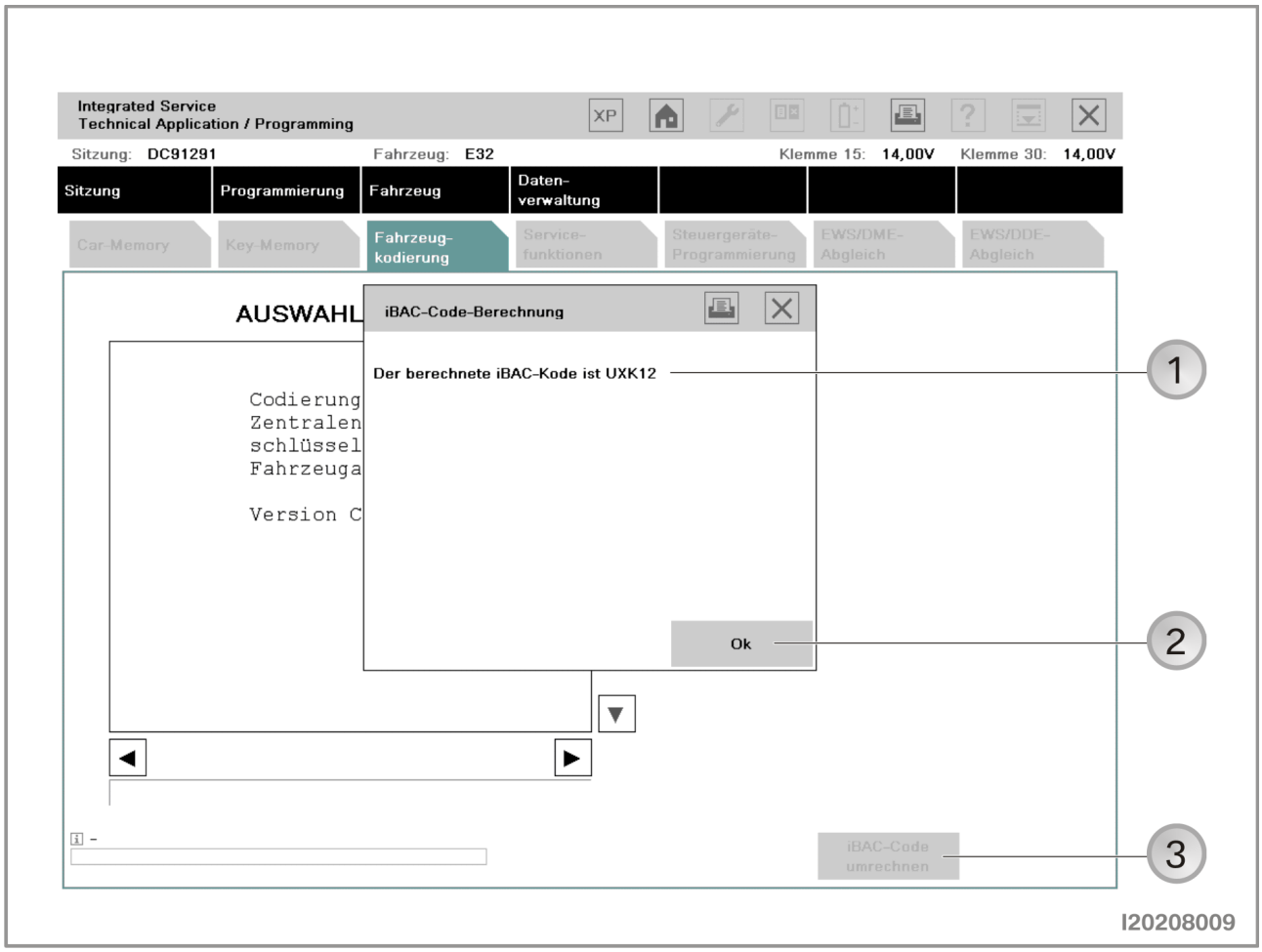
Calculating 5-character IBAC enable code

The 15-character IBAC enable code must be converted into a 5-character IBAC enable code on vehicle model series that are processed via SGC (E31, E32, E34).

To convert the IBAC enable code, click on "Convert IBAC code" button in any SGC screen. Enter the 15-character IBAC enable code and click on the "Calculate" button. The entry must take into account upper/lower case letters.



Index	Screen element	Index	Screen element
1	Input box for 15-character IBAC enable code	2	Selected IBAC service
3	"Calculate" button, the 5-character IBAC enable code is calculated		



Index	Screen element	Index	Screen element
1	The calculated 5-character IBAC enable code is shown	2	"OK" button
3	"Convert IBAC code" button (not selectable)		

Make a note of the calculated 5-character IBAC enable code and enter manually when requested to do so by SGC.

Note:

The 5-character IBAC enable code is not stored.
Observe upper case/lower case letters.

Vehicle and Key Memory (CKM)

On customer request, various vehicle settings can be changed by means of coding on certain E-model series (e.g. E46, E6X). Some settings (Key) are allocated to a certain key (max. four keys), e.g. heating/air conditioning/ventilation while other settings (Vehicle) apply globally to the entire vehicle, e.g. antitheft alarm system.

Vehicle and Key Memory settings can be selected under the "CKM" tab after determining the native measures plan in the "Vehicle" menu.

Note:

Due to different legal stipulations, there may be national differences in possible CKM settings. Factory settings may also vary from country to country.

Note:

When replacing control modules, it may happen that individual data in the CKM settings are not automatically restored. Before replacing a control module, the CKM settings in the vehicle must be printed out so that these can be restored after the control module has been replaced.

BMW E70, E71, E81, E82, E87, E88, E90, E91 E92, E93, F01 F02
MINI R55 and R56

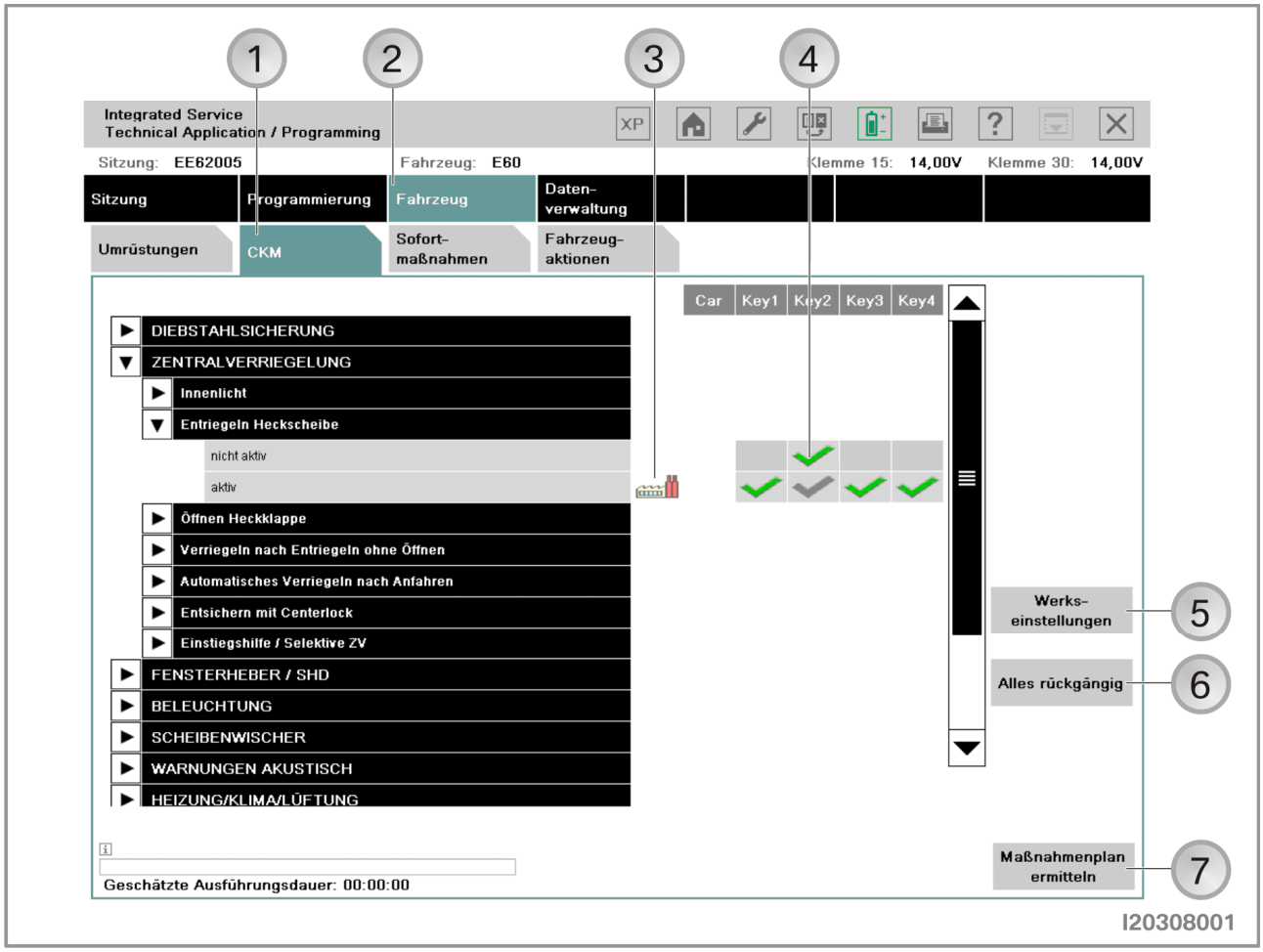
On these model series, all Vehicle and Key Memory functions are programmed directly in the vehicle (please refer to "Personal Profile" in the Owner's Manual: individual settings for a maximum of 3 remote control units via the display in the instrument cluster or via the Central Information Display).

BMW E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E83, E85 and E86
MINI R50, R52 and R53
Rolls-Royce

The procedure for programming the Vehicle and Key Memory is described below. The basic prerequisite is that all control modules on a vehicle are programmed to the current software status:

Two or more parameter keywords (e.g. active, inactive) are assigned to a function or a function keyword. The current setting is shown by a selected checkbox next to the parameter keyword and can be changed by the service technician. Key functions can be set individually for the max. 4 keys. The factory setting is represented by a corresponding symbol next to the parameter keyword.
The CKM functions are divided into a maximum of three levels of hierarchy. Main group (e.g. central locking), group (e.g. unlocking rear window, boot/rear lid) and an optional subgroup (e.g. lids after ignition on).

Vehicle and Key Memory



Index	Screen element	Index	Screen element
1	"CKM" tab	2	"Vehicle" menu
3	Symbol for "Factory settings", shows the factory setting of the function	4	Tick - the green tick shows the selected setting of the function, the gray tick shows the active setting of the function
5	"Factory settings" button, establishes the factory settings for the vehicle and keys	6	"Cancel all" button, cancels all settings
7	"Determine measures plan" button		

Note:

You can print out the set CKM values. Printing out the CKM settings could cause values that have been entered in the list but not yet stored in the vehicle to be lost, making it necessary to re-enter them. It is advisable to print out the CKM settings at the start of programming and if necessary immediately after completing CKM reprogramming.

Procedure for changing CKM settings

User action	Result
Activate the required change by selecting "active", "not active" or one of the specified settings.	
Click on "Determine measures plan" button.	
	Measures plan is determined.
Click on "Accept measures plan" button.	
	The data is saved to the vehicle.
Select "Final report" tab.	
	A final report of the settings that have been performed is shown.

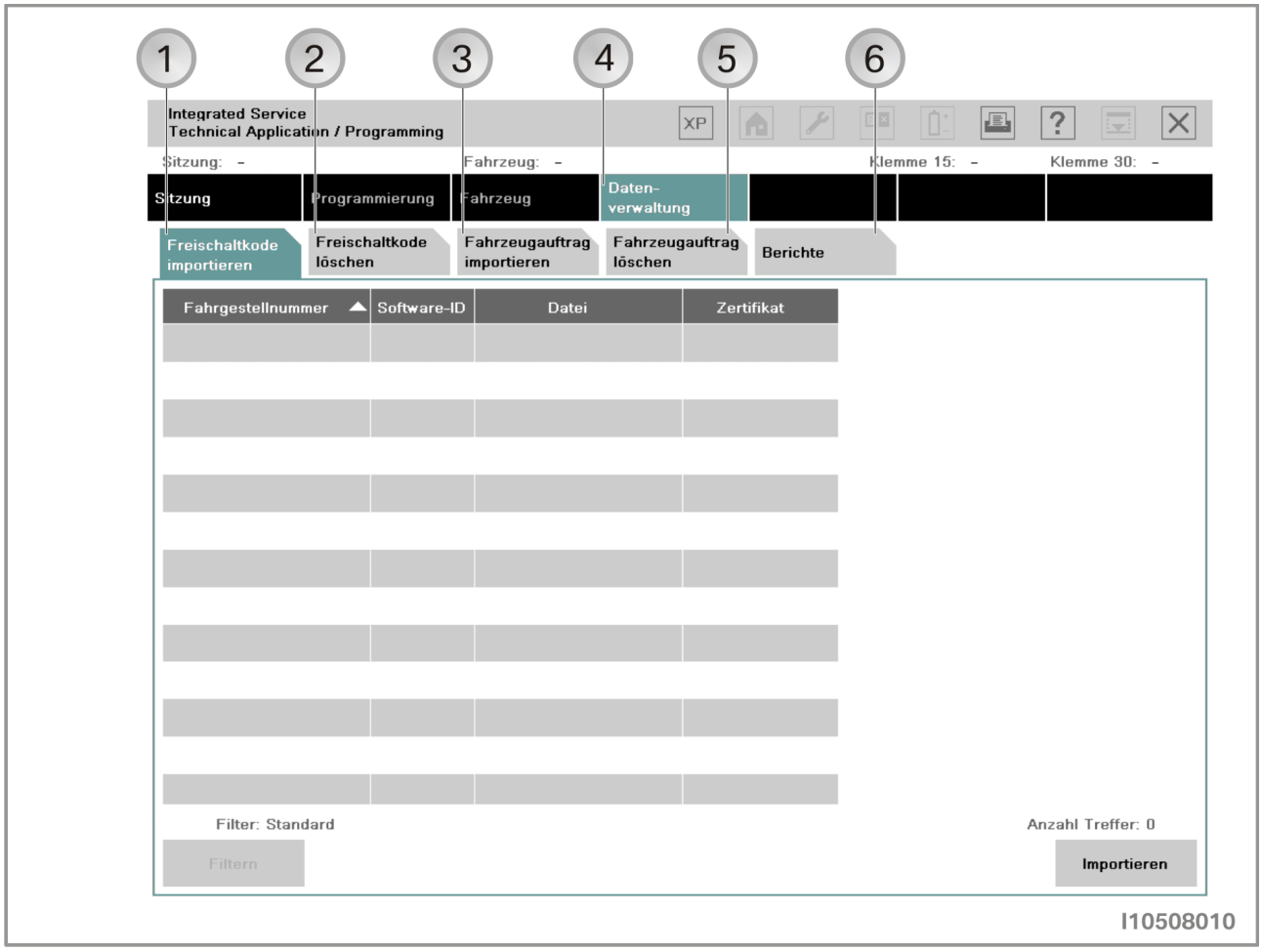
Note:

The selected settings for the Vehicle and Key Memory are retained even when the control modules are reprogrammed or encoded. If the CKM backup or restore cannot be successfully performed, this will be seen in the final report.

ISTA/P Data management

Enable codes and vehicle orders or central coding keys are imported and managed via the "Data management" menu button. This button is also used to show the reports of previous sessions.

Data management:



Index	Screen element	Index	Screen element
1	"Import Enable code" tab	2	"Delete enable code" tab, deletes imported enable codes
3	"Import vehicle order" tab	4	"Data management" menu
5	"Delete vehicle order" tab, deletes imported vehicle orders	6	"Reports" tab, shows previous sessions with final report

Import vehicle order

All the vehicle identification numbers where the vehicle order is in the data stock of ISTA/P are shown in a selection list. The user can select a vehicle identification number and have the corresponding vehicle order displayed. The user can additionally search for a vehicle identification number by correspondingly changing the sorting function. New vehicle orders can be imported from removable data media to the data stock of ISTA/P.

User action	**Result**
Select "Import vehicle order" tab.	
	Vehicle identification numbers are shown, for which vehicle orders or central coding keys are already available.
Click on "Import" button.	
	Request to insert a data medium is shown.
Load data medium in ISSS or set up connection between ISSS and USB storage medium.	
Click on "OK" button.	
	Vehicle order is imported.

Note:

In view of the variety of USB storage media available on the market, a functional guarantee cannot be given under ISTA/P for all USB storage media used on an ISSS.

Import activation code

In some control modules the software is enabled with ISTA/P (e.g. when programming the CCC, an enable code must be imported in order to activate the "Expanded Voice Recognition" option).

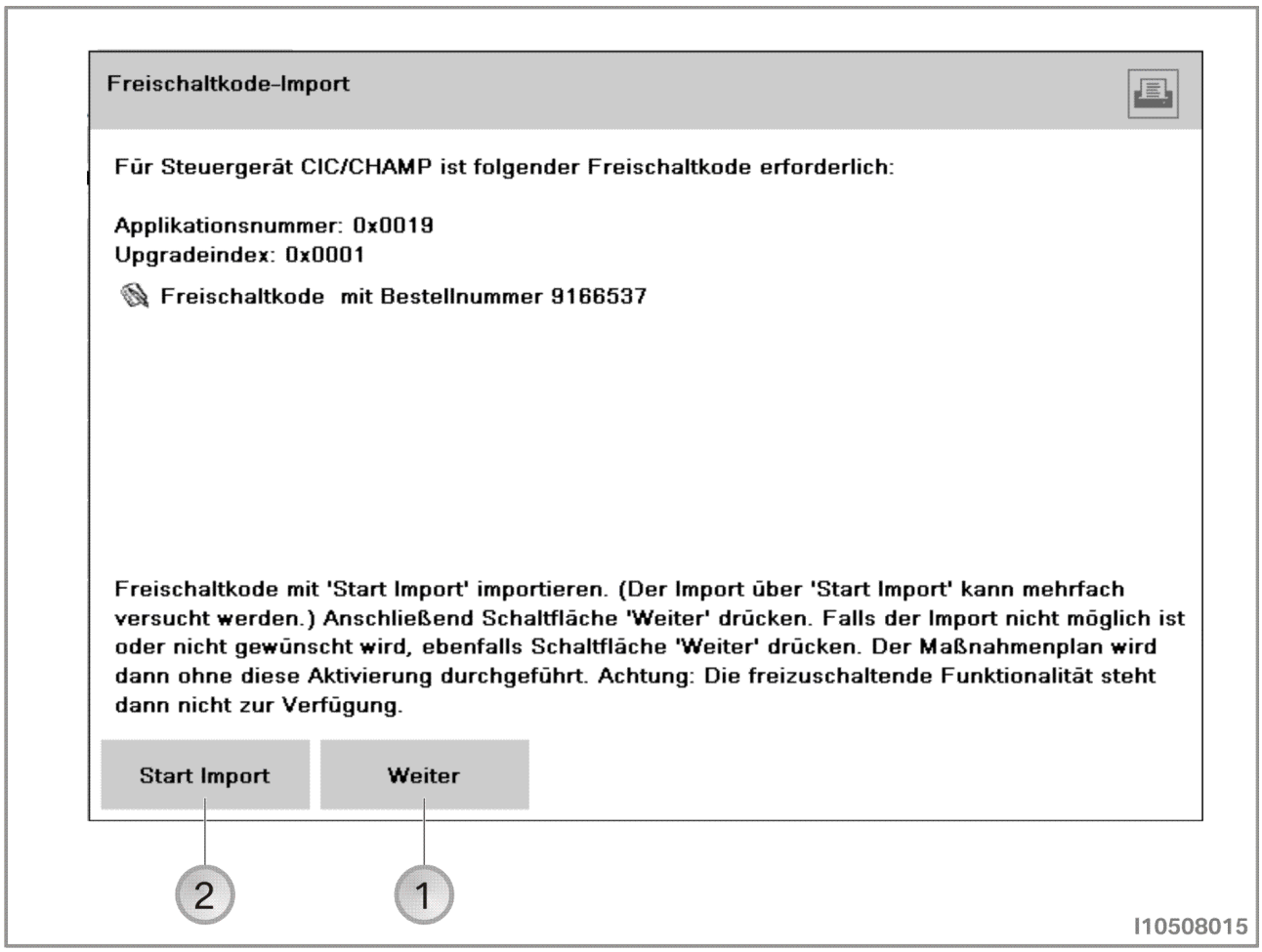
In ISTA/P it is possible to import enable codes for a vehicle before working through the measures plan. All imported enable codes are stored within the ISPI network and are available for future programming sessions without the need to import them again.

User action	**Result**
Select "Import enable code" tab.	
	Vehicle identification numbers are shown, for which enable codes are already available.
Click on "Import" button.	
	Request to insert a data medium is shown.
Load data medium in ISSS or set up connection between ISSS and USB storage medium.	
Click on "OK" button.	
	Enable code is imported.

Note:

With the vehicle identification number, the enable code can be ordered and downloaded as a ZIP files (containing 3 files) through the ASAP-Portal.
The ZIP file must be unzipped and placed on the "Root directory" of the data medium (e.g. F:\). In view of the variety of USB storage media available on the market, a functional guarantee cannot be given under ISTA/P for all USB storage media used on an ISSS.

If a required enable code is not available in the workshop network at the start of the measures plan, a request to import/order the enable code will be issued while working through the measures plan.



Index	Screen element	Index	Screen element
1	"Continue" button Continue measures plan without enable code	2	"Start import" button, imports enable code from data medium

It is possible to work through the measures plan without importing the enable code. The corresponding is then not available. The enable code can be entered at a later point in time to activate the function.

BMW vehicle programming and encoding

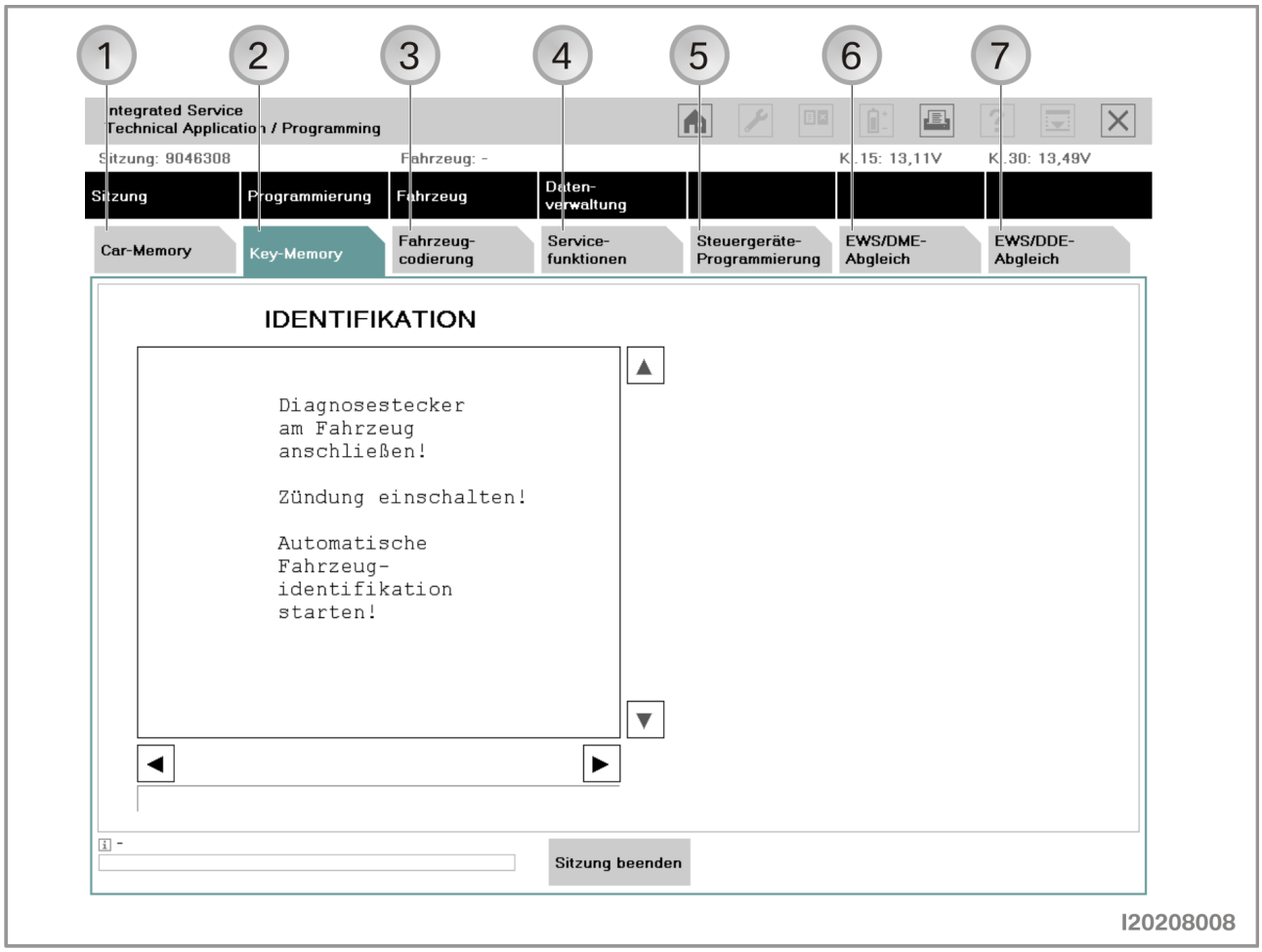
Depending on the structure of the vehicle system network, the model series can be grouped together in model series groups with respect to the ISTA/P programming routine: The following pages contain descriptions of the programming procedure.

Note:

The basic requirement for efficient programming is that the vehicle is correctly prepared. Please refer to the description "Vehicle programming and finishing off".

Programming procedure for model series E31, E32 and E34

The application software "Control module encoding" (SGC) for encoding and programming the earlier model series has been integrated into ISTA/P.



Index	Screen element	Index	Screen element
1	"Vehicle Memory" tab, Vehicle Memory value settings	2	"Key Memory" tab, Key Memory value settings
3	"Vehicle coding" tab, control module coding	4	"Service functions" tab, shows service functions, (e.g. flash radio)
5	"Control module programming" tab, service measures Replacing control modules or EPROM, deleting adaptation values	6	"EWS/DME calibration" tab, synchronizes EWS and DME control modules
7	"EWS/DDE calibration" tab, synchronizes EWS and DME control modules		

A detailed description of the programming and encoding procedure is not provided here as only the access and not the procedure has changed in terms of programming the model series that are programmed via SCG programming.

Programming abort of programmable drive control modules (E31, E32, E34)
Proceed as follows if programming always cancels at the same point:

- Disconnect the drive control module for about 1 minute
- Reconnect the drive control module
- Switch on ignition
- Repeat programming
- Switch off ignition.

Programming caused by the instrument cluster (E31, E32, E34)
In isolated cases, the instrument cluster can interrupt communication on the diagnosis lead during programming. In such cases, repeat programming with the instrument cluster disconnected. Before EWS calibration, the instrument cluster must be reconnected.

Malfunctions on the diagnosis cable (E31, E32, E34)
With the following engine control module, it may be the case that no programming can be performed again after a programming abort:

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

After trying again, the fault message:
"Programming cannot be performed without errors - repeat programming" appears.
Diagnosis is not possible here. Switch the ignition off and back on again. You can now repeat programming.

Display of error messages (E31, E32, E34)
The text display of fault messages appears on the screen. The relevant fault code can be called up by pressing the information button at the bottom right of the screen.

Contact Technical Support

Consult Technical Support if

- Programming aborts repeatedly occur
- Programming is not possible.

In such cases, keep the following ready to hand:

- Measures plan
- Final report
- Diagnosis printout of the control modules concerned
- Full error message
- Version of ISTA/P used.

New coding (E31, E32, E34)
All control modules that require encoding MUST be encoded after being fitted.
Malfunctions could occur if this encoding procedure is not carried out after fitting.
Encoding a control module takes no more than 30 seconds.
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 - New coding"
- Select system (e.g. "Airbag")
- Answer the question "Start automatic encoding" with "Y".

Note:

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

- Follow the instructions given by the user prompts
- After encoding, clear the fault memory via the vehicle test in the ISTA workshop system.

Programming procedure for the model series E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E70, E71, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92 and E93

The following pages contain descriptions of the programming procedure for the BMW model series listed above.

Note:

The basic requirement for efficient programming is that the vehicle is correctly prepared. Please refer to the description "Vehicle programming and finishing off".

Read out vehicle data with ISTA/P. See Section: Start new session with ISTA/P.

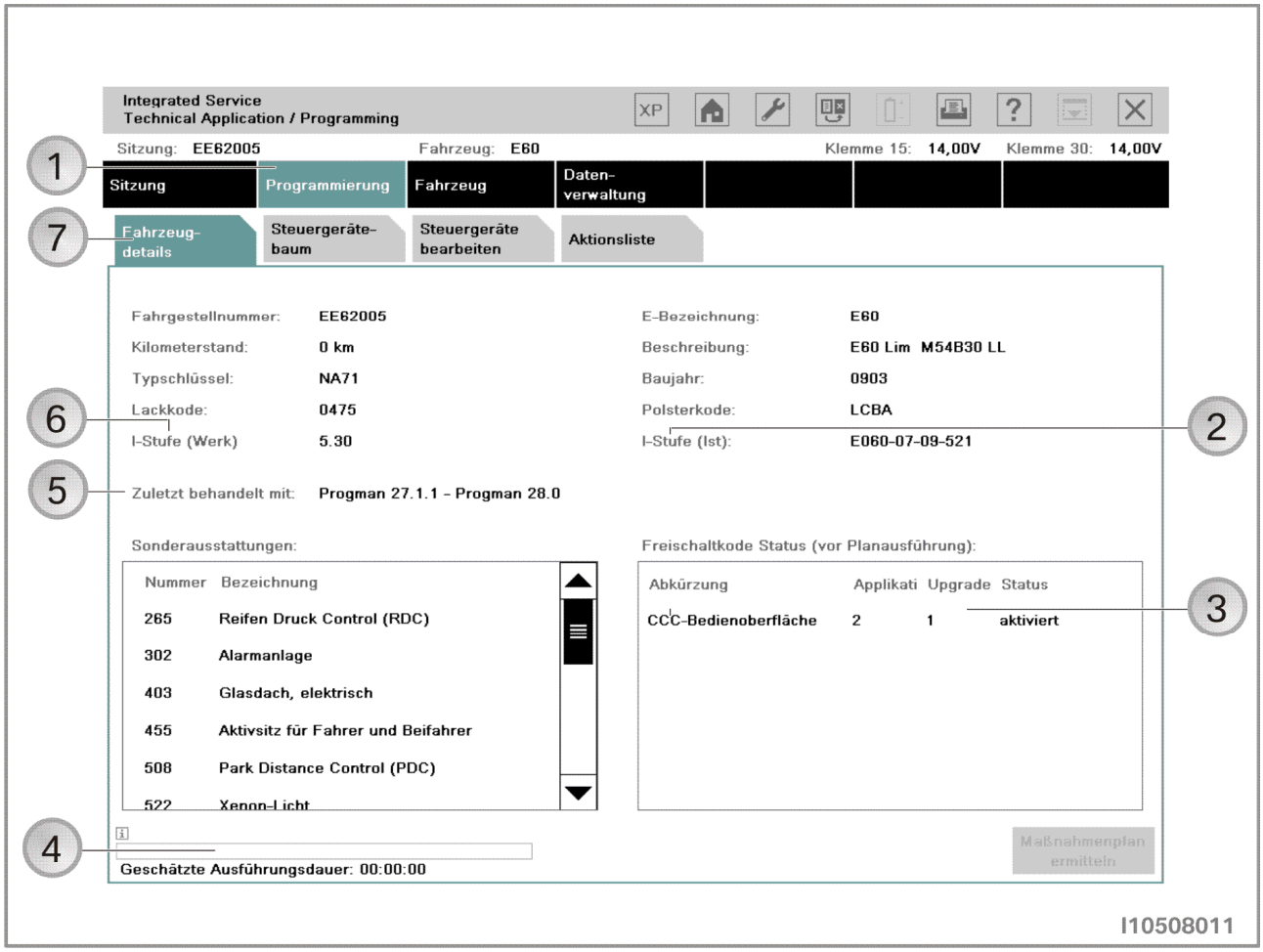
The measures plan can be expanded by the following actions:

- Carry out conversion
- Carry out vehicle actions
- Set CKM values (E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65 E66, E83, E85 and E86)
  - Select "Vehicle" tab.
  - Select "CKM" tab.
  - Print CKM values.
- Prepare for control module replacement
- Programs control module
- Encode control module.

The actions can be selected as follows:

- Under the "Process control modules" tab by directly selecting the actions or clicking on the control module
- Under the "Control module tree" tab by clicking on the control module.

Connection to vehicle is set up automatically:



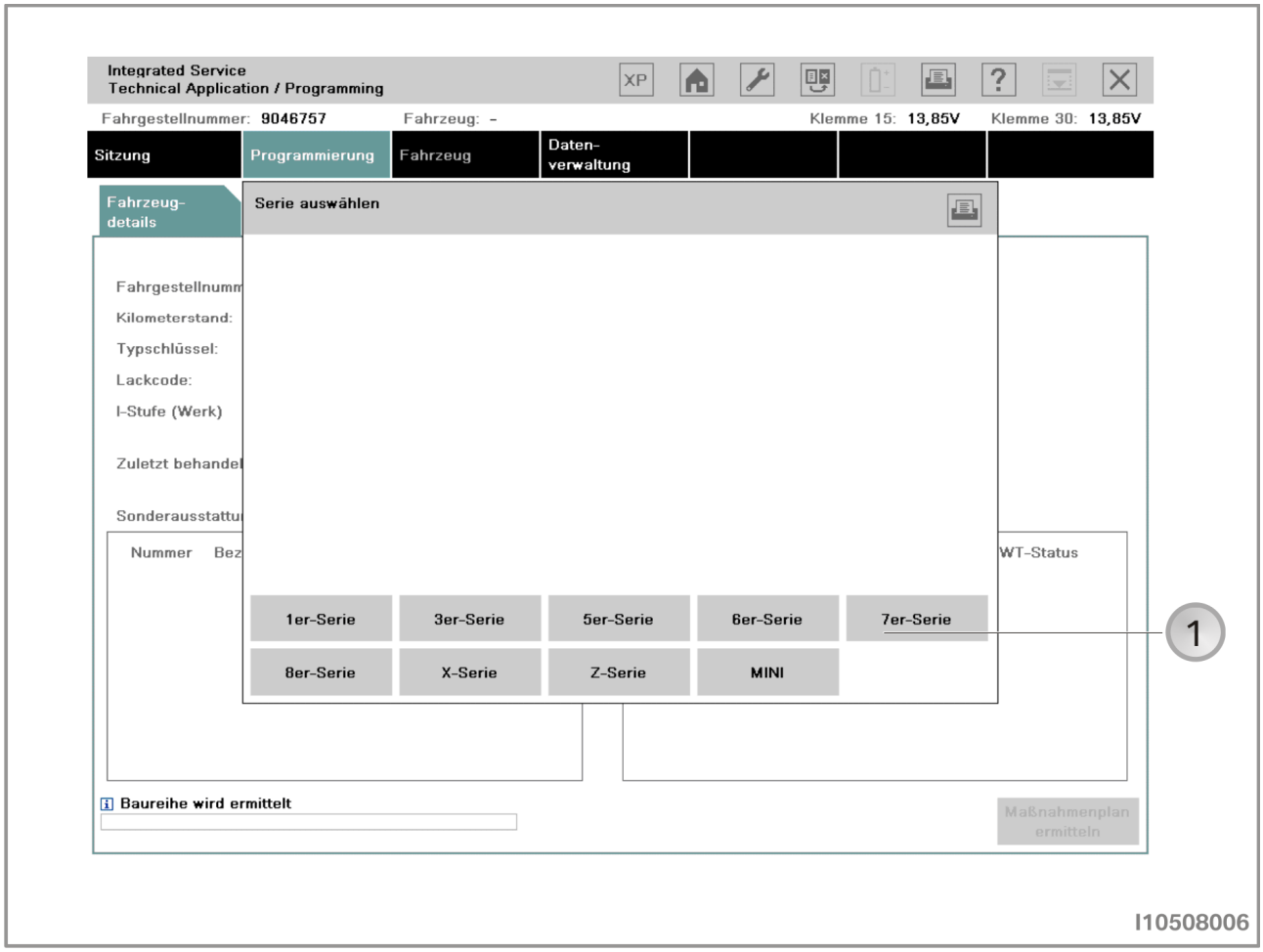
Index	Screen element	Index	Screen element
1	"Programming" menu	2	I-stage (actual), shows current I-stage of vehicle
3	Enable code status, status of enable code used or required in vehicle	4	Progress bar, shows processing progress
5	Last processed with, shows the Progman or ISTA/P version, with which the vehicle was last processed	6	I-stage (factory), shows the I-stage with which the vehicle was produced
7	"Vehicle details" tab		

Follow and confirm the instructions provided by the programming system.

By reading out the vehicle details it is possible to determine whether the vehicle corresponds to the current software status. Unnecessary vehicle programming can be avoided in this way.

The native measures plan is determined after the connection to the vehicle has been set up successfully. This is shown under the "Programming" menu button.

Selecting vehicle manually:

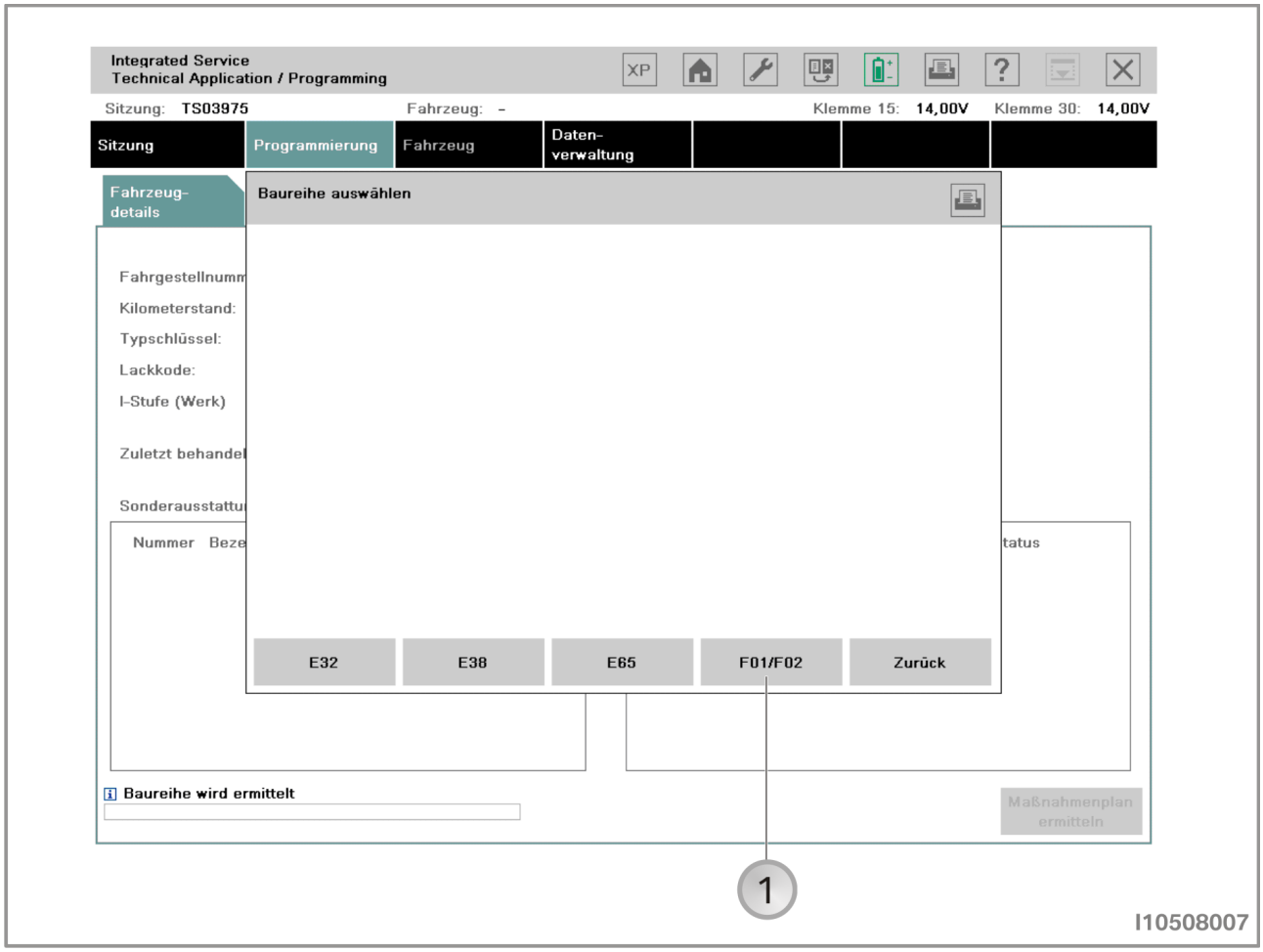


Index	Screen element
1	"Product line" button, product line selection

If automatic recognition of the model series fails, you will be requested to enter the vehicle identification number.

The vehicle can also be determined manually. For this purpose, select the product line by clicking on the corresponding button.

Selecting model series manually:

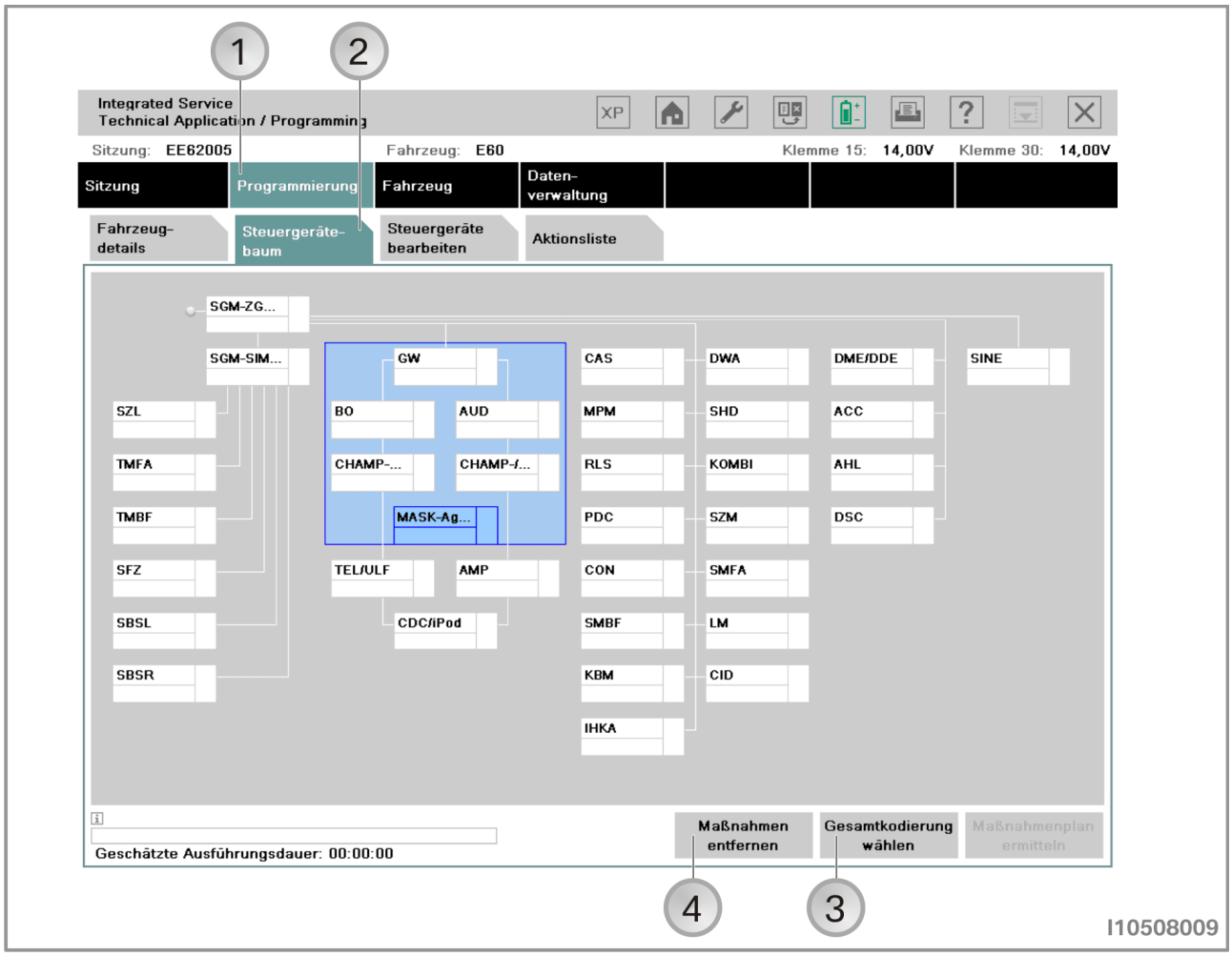


Index	Screen element
1	"Model series" button, model series selection

Select the model series for the connected vehicle by clicking the corresponding button.

Control module tree:

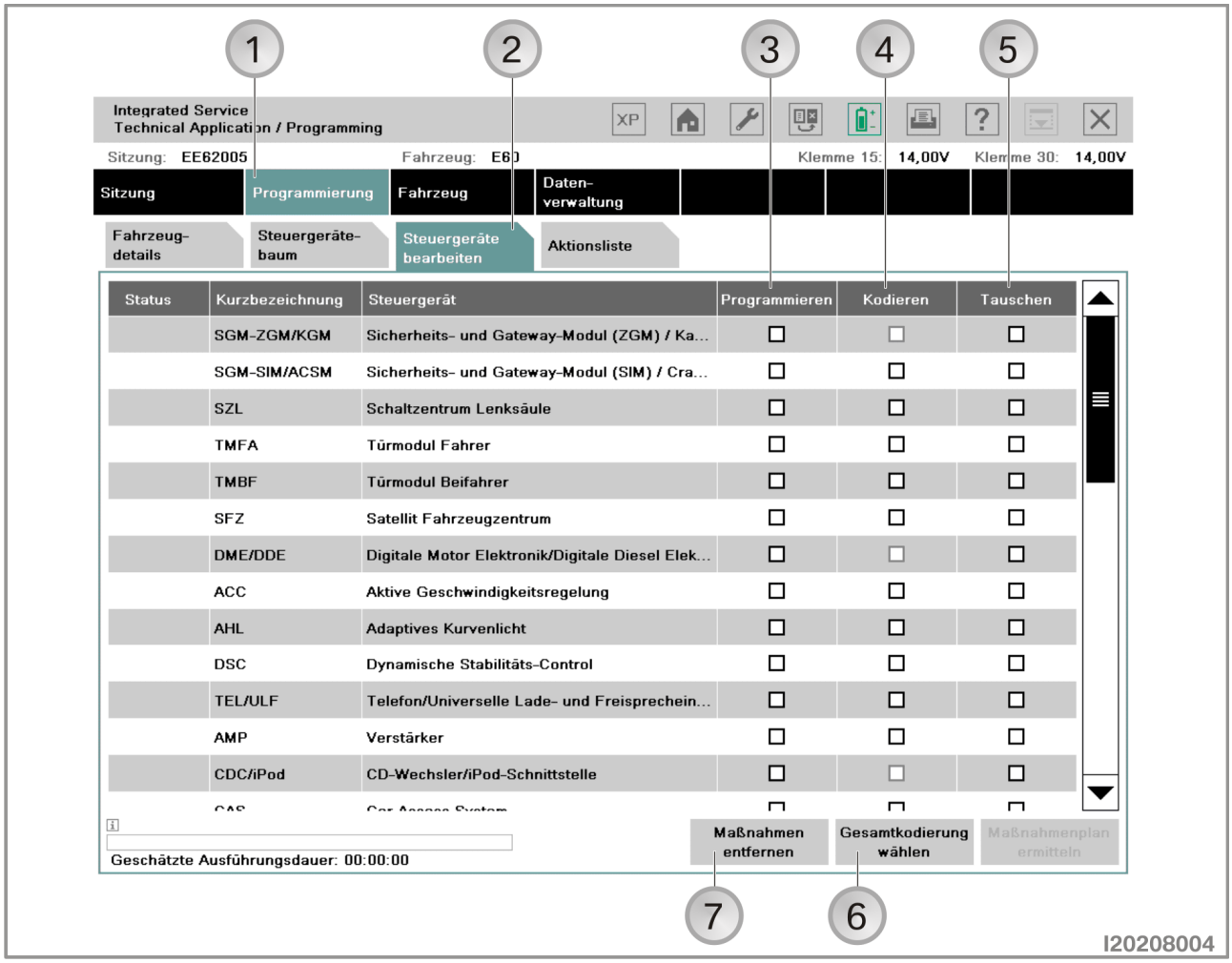
The control module tree shows the control units fitted in the vehicle corresponding to the topology. Each control module is shown as linked to the corresponding bus. Compound control modules are shown within a light blue area.



Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Control module tree" tab, graphic representation of the control module tree
3	"Select complete coding" button, selects complete coding of the vehicle	4	"Remove actions" button

All actions determined based on the context are removed by clicking on the "Remove actions" button. Control module actions relevant to I-stages cannot be selected manually.

Display under "Process control module":



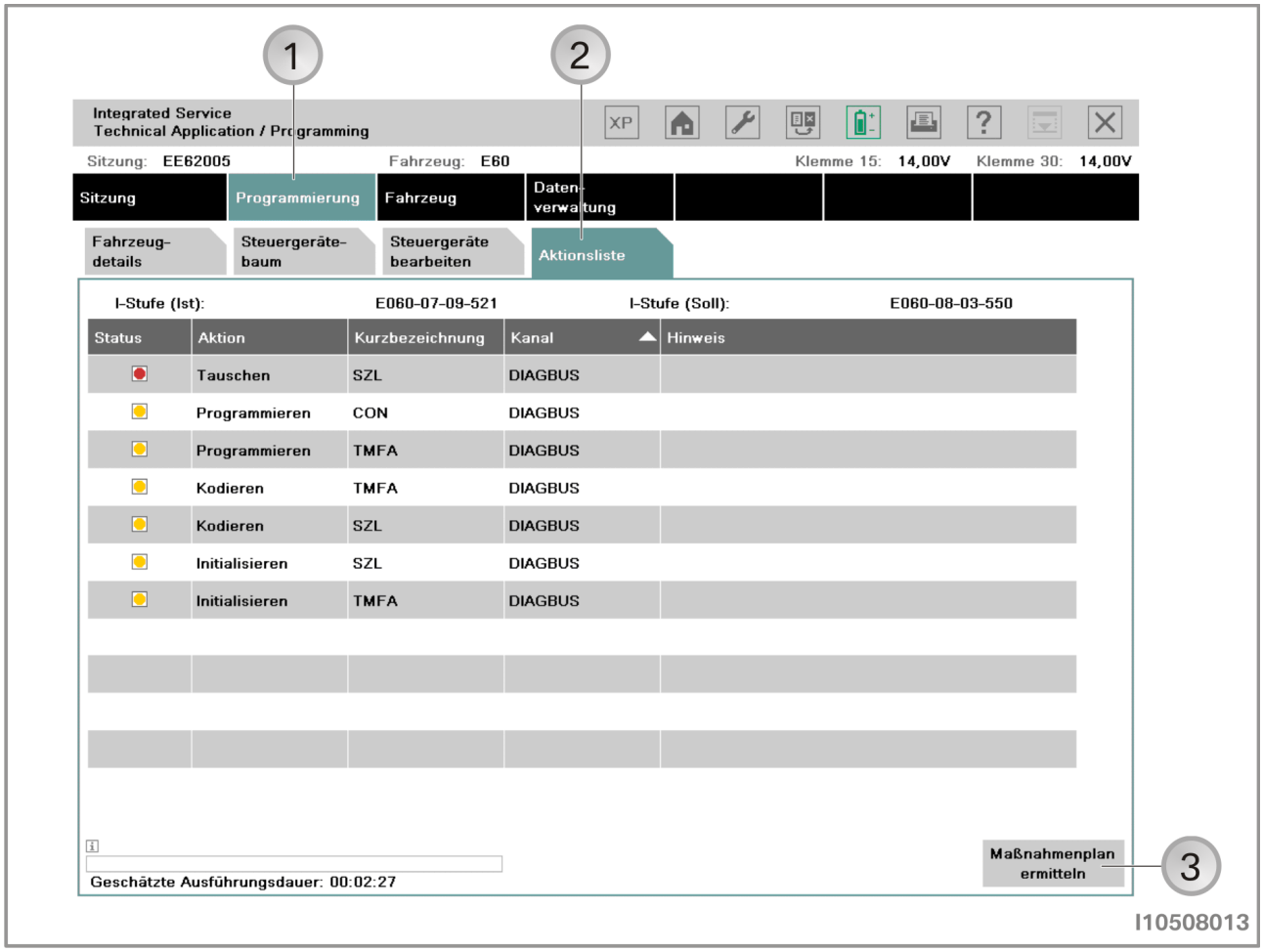
Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Process control modules" tab
3	Programming, programs control module	4	Encoding, encodes control module
5	Replacement	6	"Select complete coding" button, selects complete coding of the vehicle
7	"Remove actions" button		

The actions ("Programming", "Encoding" or "Replacing") available for the control modules can be selected directly.

Note:

The "Determine measures plan" button is deactivated if determining the target context results in no action.

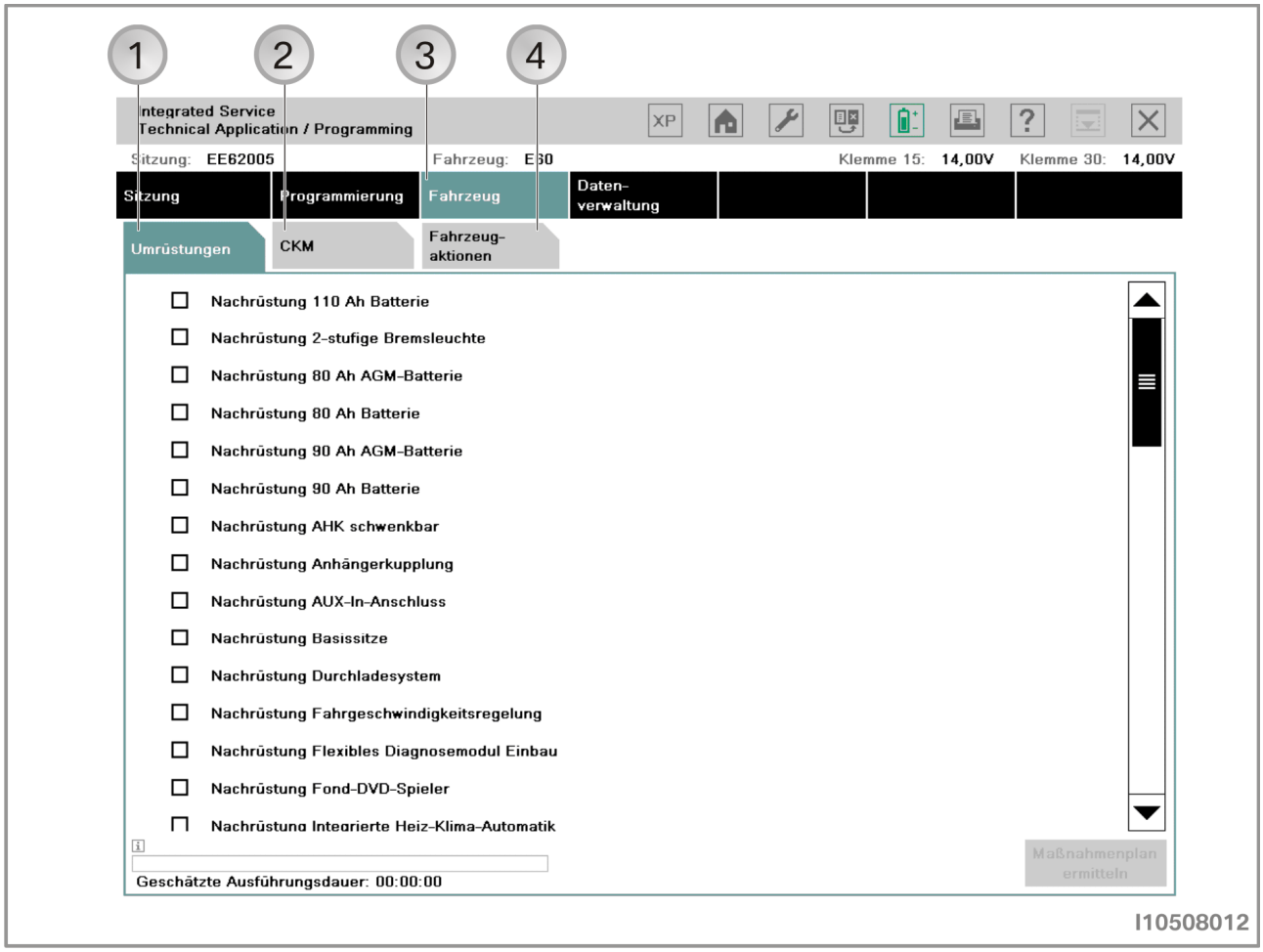
Action list:



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

The "Action list" is a summary of the planned actions. They are also shown in the "Measures plan". Information relating to the control module may also be shown (e.g. control module can no longer be programmed).

Vehicle menu:



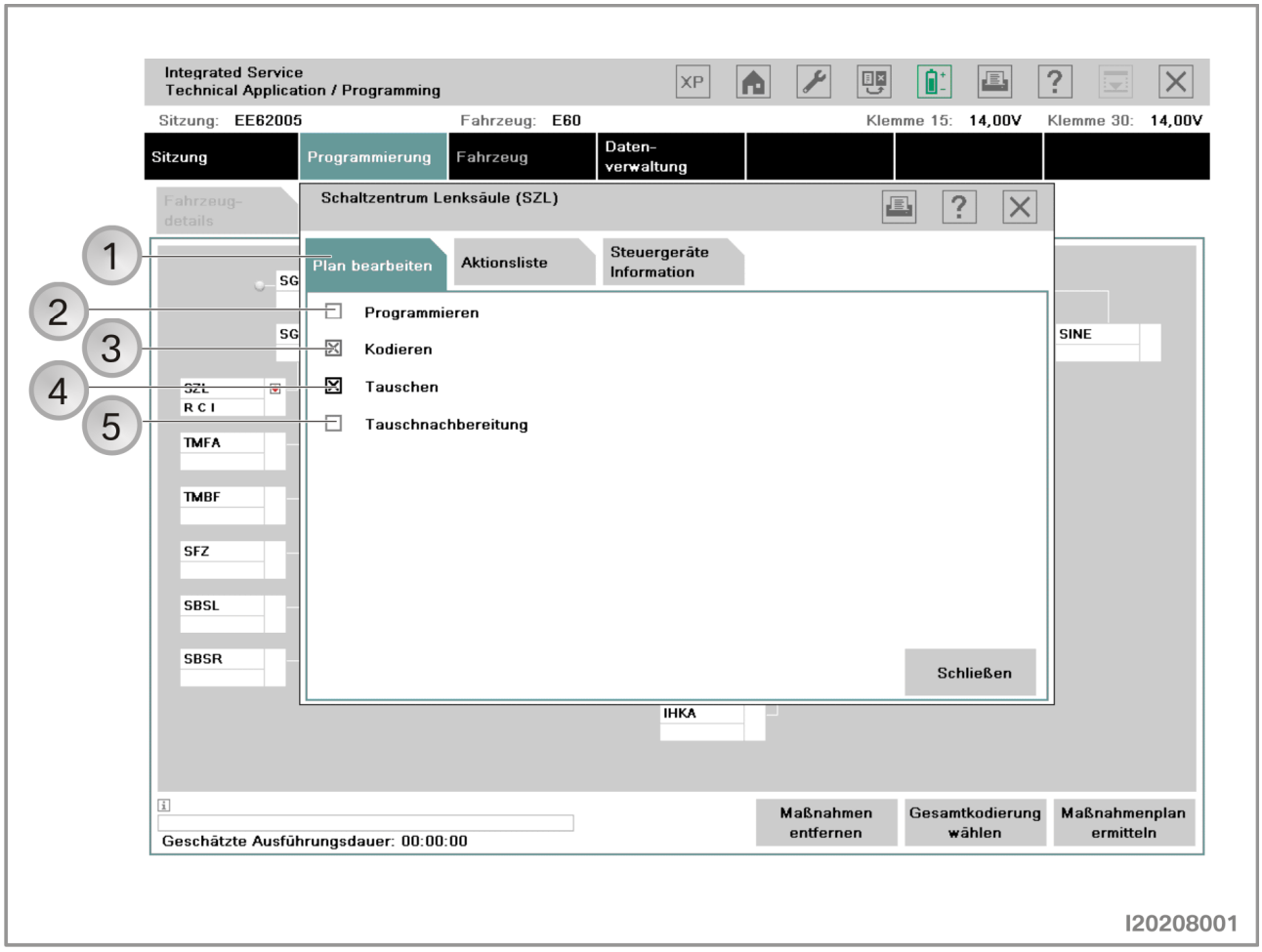
Index	Screen element	Index	Screen element
1	"Conversions" tab: The retrofits and conversions available for the vehicle are shown, see "Retrofits and conversions"	2	"CKM" tab CKM value settings, see "Vehicle and Key Memory (CKM)"
3	"Vehicle" menu	4	"Vehicle actions" tab: • Clear fault memory • Select complete coding • Start system time of all airbag control modules.

The retrofits and conversions are listed under the "Conversions" tab in the "Vehicle" menu. All retrofits are shown first, followed by the possible conversions available for the connected vehicle.

Note:

Some retrofits and conversions require the entry of IBAC enable codes, see "Retrofits and conversions", "Procedure for IBAC enable codes".

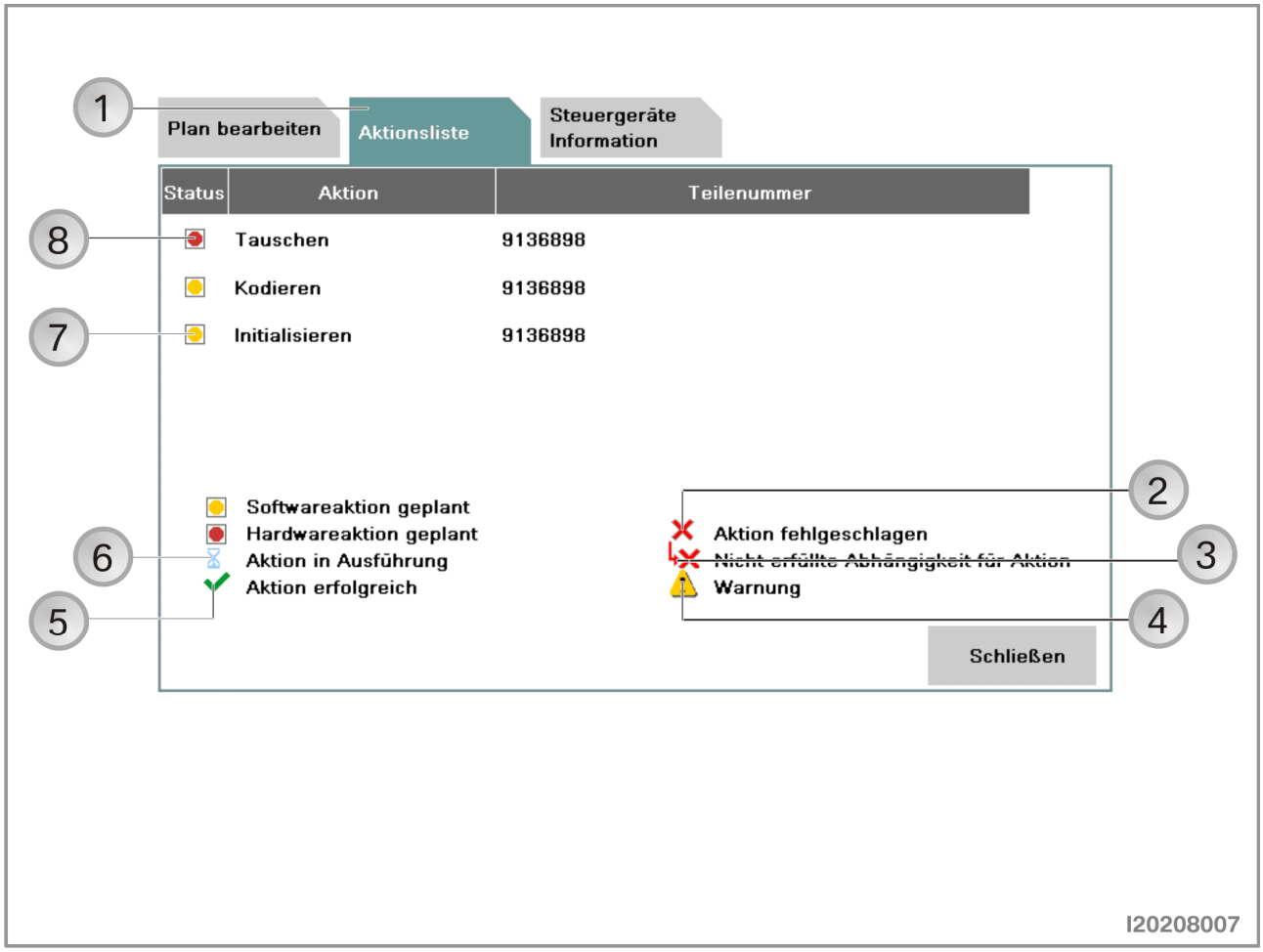
Dialogue box after clicking on the control module in "Process control module" or the control module in the "Control module tree":



Index	Screen element	Index	Screen element
1	"Edit plan" tab	2	Programming, programs control module
3	Encoding, encodes control module	4	Replace, replaces control module
5	Replacement follow-up, follow-up procedure for control module that has already been replaced		

The available actions for a control module are individual. They may differ from control module to control module depending on which actions are defined.

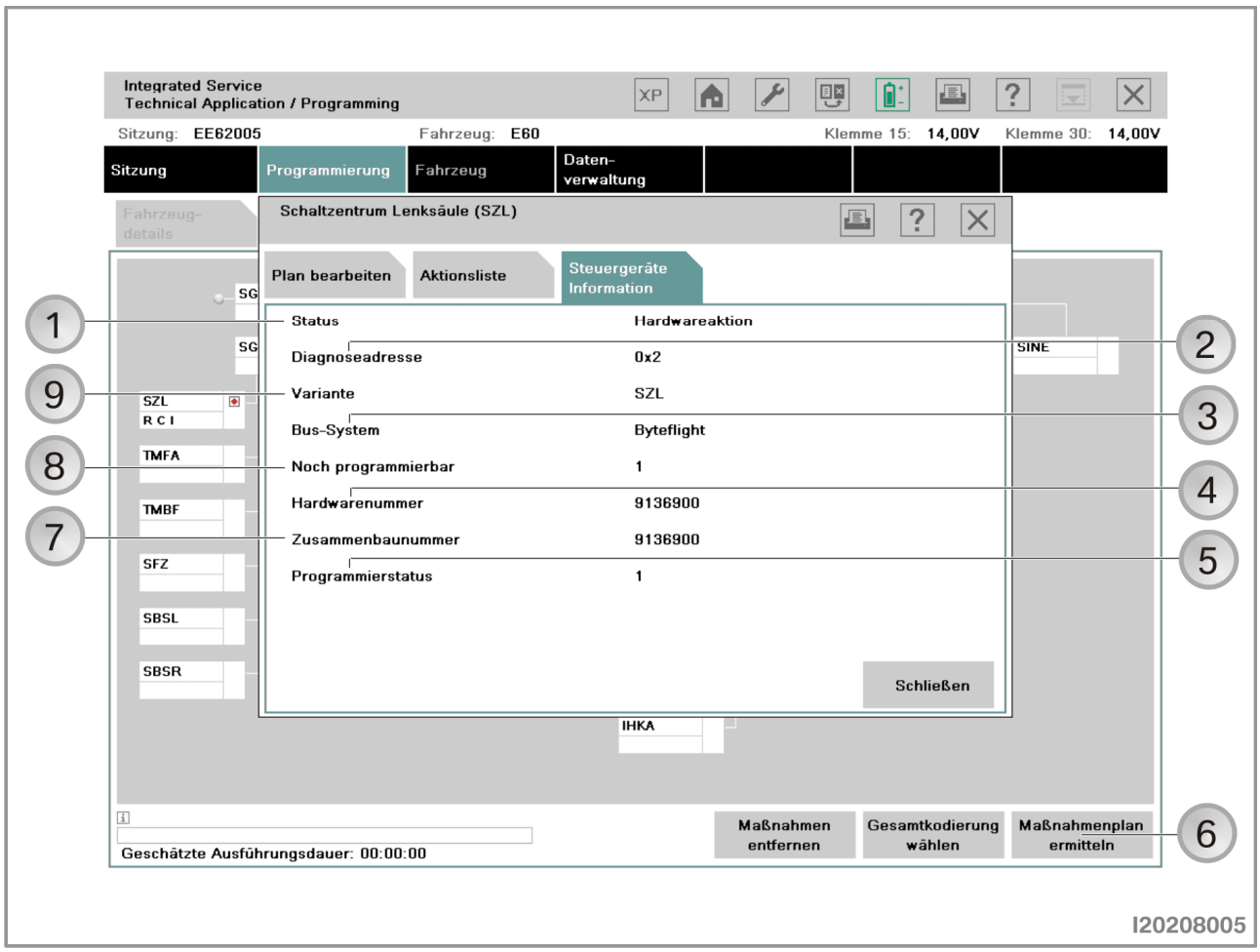
Extract from display under "Action list":



Index	Screen element	Index	Screen element
1	"Action list" tab	2	Symbol "Action failed"
3	Symbol for "Conditions for action not met" (e.g. control module was not replaced)	4	Symbol for "Warning"
5	Symbol for "Action successful"	6	Symbol for "Action in progress"
7	Symbol for "Software action planned" (e.g. encoding)	8	Symbol for "Hardware action planned" (e.g. replace control module)

The planned actions are shown together with their respective status by selecting the "Action list" tab.

Display under "Control module information":



Index	Screen element	Index	Screen element
1	Status, planned action	2	Diagnosis address of control module
3	Bus system to which the control module is connected	4	Hardware number of control module
5	Programming status, display of detailed information	6	"Determine measures plan" button
7	Assembly number, is made up of hardware number and software number of control module	8	Still programmable, shows how often the control module can still be programmed
9	Control module variant		

The information relating to the selected control module is shown by selecting the "Control module information" tab. In addition to the planned action and other relevant data, it also shows how often the control module can still be programmed.

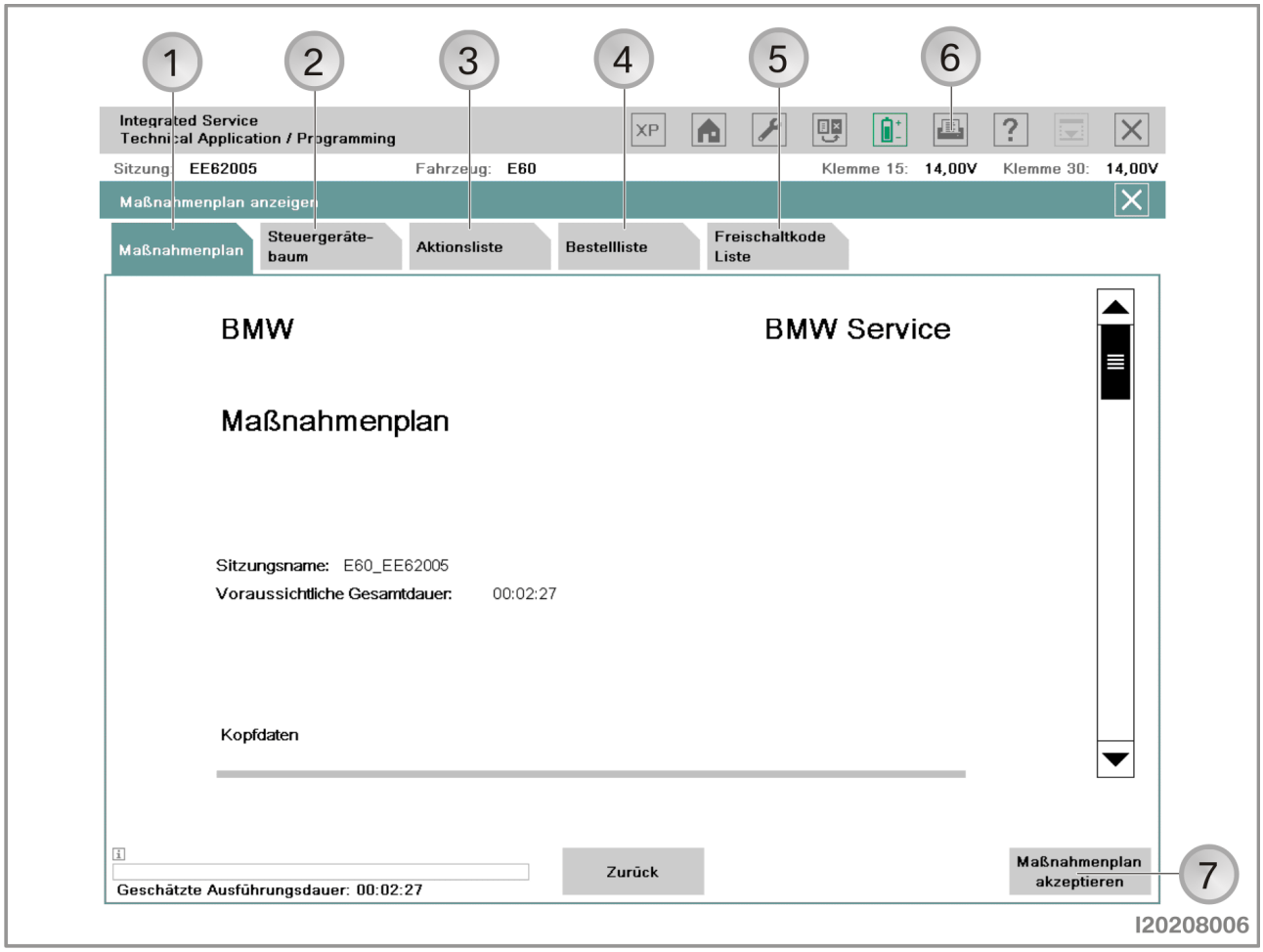
Note:

The "Determine measures plan" button is deactivated if no actions are to be selected.

Determine measures plan

User action	Result
Select "Determine measures plan".	
	The "Measures plan", "Control module tree", "Action list", "Order list" and "Enable code list" tabs are shown.
	The measures plan is shown in the menu window. Control modules that are to be processed are identified by a yellow symbol. A red symbol indicates replacement or installation of a control module. No action is planned for the control module if no symbol is shown. The actions are indicated as follows: **P** Programming **C** Encoding **I** Initializing **M** Installing **R** Replacing **U** Removing.
Select "Measures plan" tab.	
	The measures plan is shown in the print view.

Measures plan in print view:



Index	Screen element	Index	Screen element
1	"Measures plan" tab, shows measures plan in print view	2	"Control module tree" tab, shows the control module tree together with the planned actions
3	"Action list" tab, shows the planned actions in a table	4	"Order list" tab, shows control modules to be ordered
5	"Enable code list" tab, shows the enable codes used	6	"Print" button, prints the measures plan
7	"Accept measures plan" tab, executes measures plan and programs vehicle		

The measures plan contains actions that need to be carried out in order to eliminate a vehicle fault. In addition to the determined actions, it also shows the vehicle details, the session name and the ISTA/P version used.

Executing measures plan and programming vehicle

User action	Result
Print measures plan.	
Select "Accept measures plan".	
	The measures plan is shown in the menu window. Control modules that did not respond are indicated without a colored symbol. Control modules that are to be processed are identified by a yellow symbol. A red symbol indicates replacement or installation of a control module. No action is planned for the control module if no symbol is shown.
	The "Control module tree" and "Action list" tabs are shown.
Observe and acknowledge safety information on programming.	
	Measures plan is executed.
	Plan is followed up.
Carry out initialization and instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Print final report.	

Control module replacement

The control modules to be replaced are determined by the measures plan. The request to replace a control unit is integrated in the measures plan procedure. The new control modules must be encoded after installation to ensure they operate correctly.

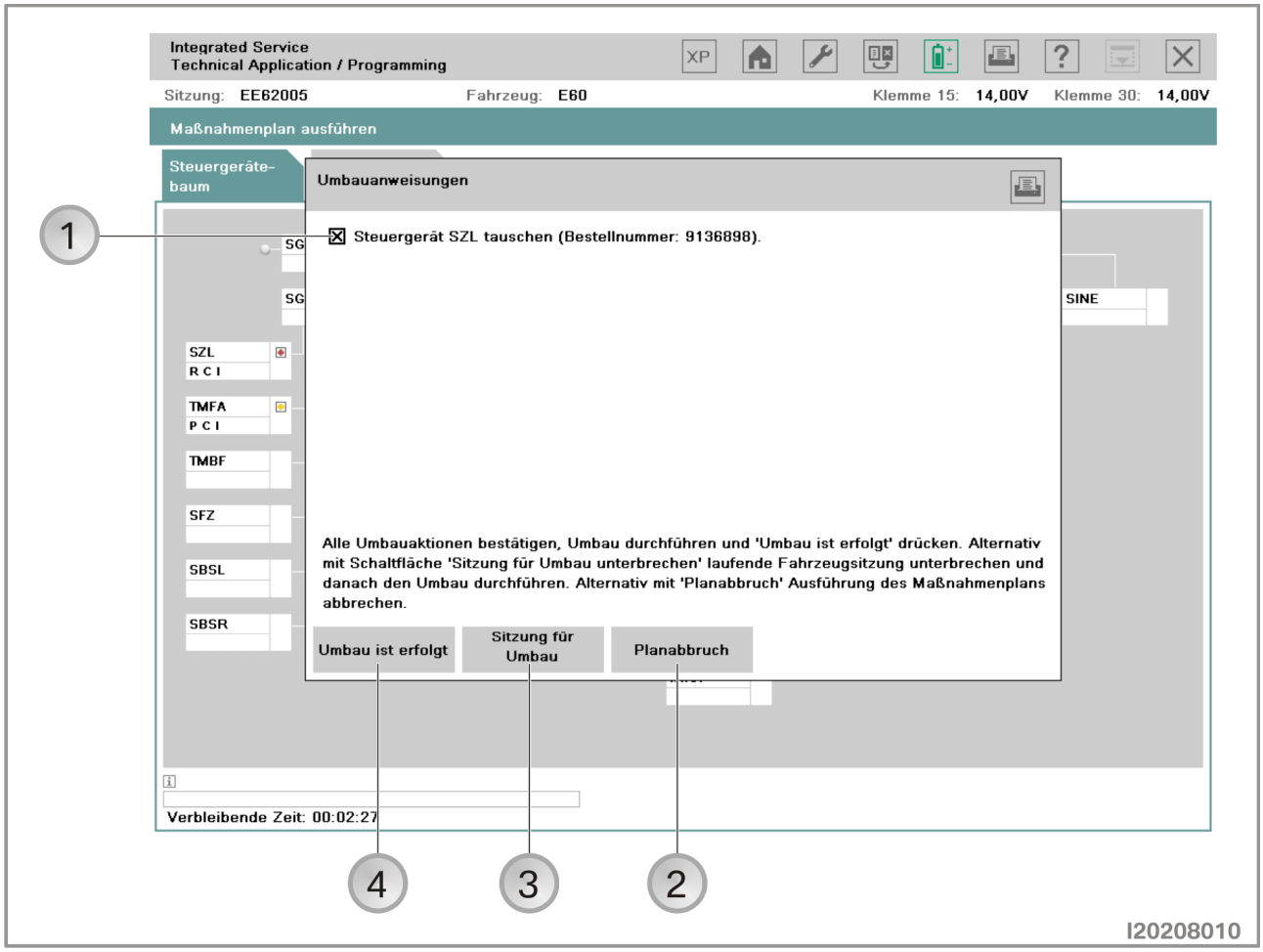
The control module replacement procedure can be carried out as follows and is described on the following pages:

- Control module replacement without interrupting the session
- Control module replacement with session for modification
- Control module replacement with plan abort.

Note:

When replacing, refer to the technical documentation for the control module.

Modification instructions for control module replacement:



Index	Screen element	Index	Screen element
1	Confirmation "Replace control module"	2	"Plan abort" button Cancels session
3	"Modification session" button, control module replacement with session for modification	4	"Modification done" button, control module replacement without interrupting the session

Select the appropriate control module replacement.

Control module replacement without interrupting the session

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Replace or install control modules.	
Confirm replacement request.	
Click on "Modification done" button.	
	Measures plan is continued.
	Plan is followed up.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

Control module replacement with session for modification

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Click on "Session for modification" button.	
	Session is stored and ended
Replace or install control modules.	
Start new session.	
	Stored session is found.
Select stored session.	
Confirm replacement request and click on "Modification done" button.	
	The measures plan is continued, no further actions can be added.
	Plan is followed up.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

Control module replacement with plan abort

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Click on "Plan abort" button.	
	Session is terminated
Replace or install control modules.	
Start new session.	
	Dialogue box "Replaced control modules" is shown.
Answer the question "Have control modules been replaced?" with "Yes".	
	Target context is determined.
Select replaced control modules in "Control module tree" or under "Process control modules" and select "Replacement follow-up". Click on "Determine measures plan" button.	Further actions can be added.
	The measures plan is determined and executed.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

The question "Have control modules been replaced?" at the start of a new session is to be answered with "Yes". A corresponding replacement follow-up procedure is then executed as part of the measures plan.

Programming procedure for model series F01 and F02

The following pages contain descriptions of the programming procedure for the BMW model series F01 and F02.

Note:

The basic requirement for efficient programming is that the vehicle is correctly prepared. Please refer to the description "Vehicle programming and finishing off".

Read out vehicle data with ISTA/P.
See Section: Start new session with ISTA/P.

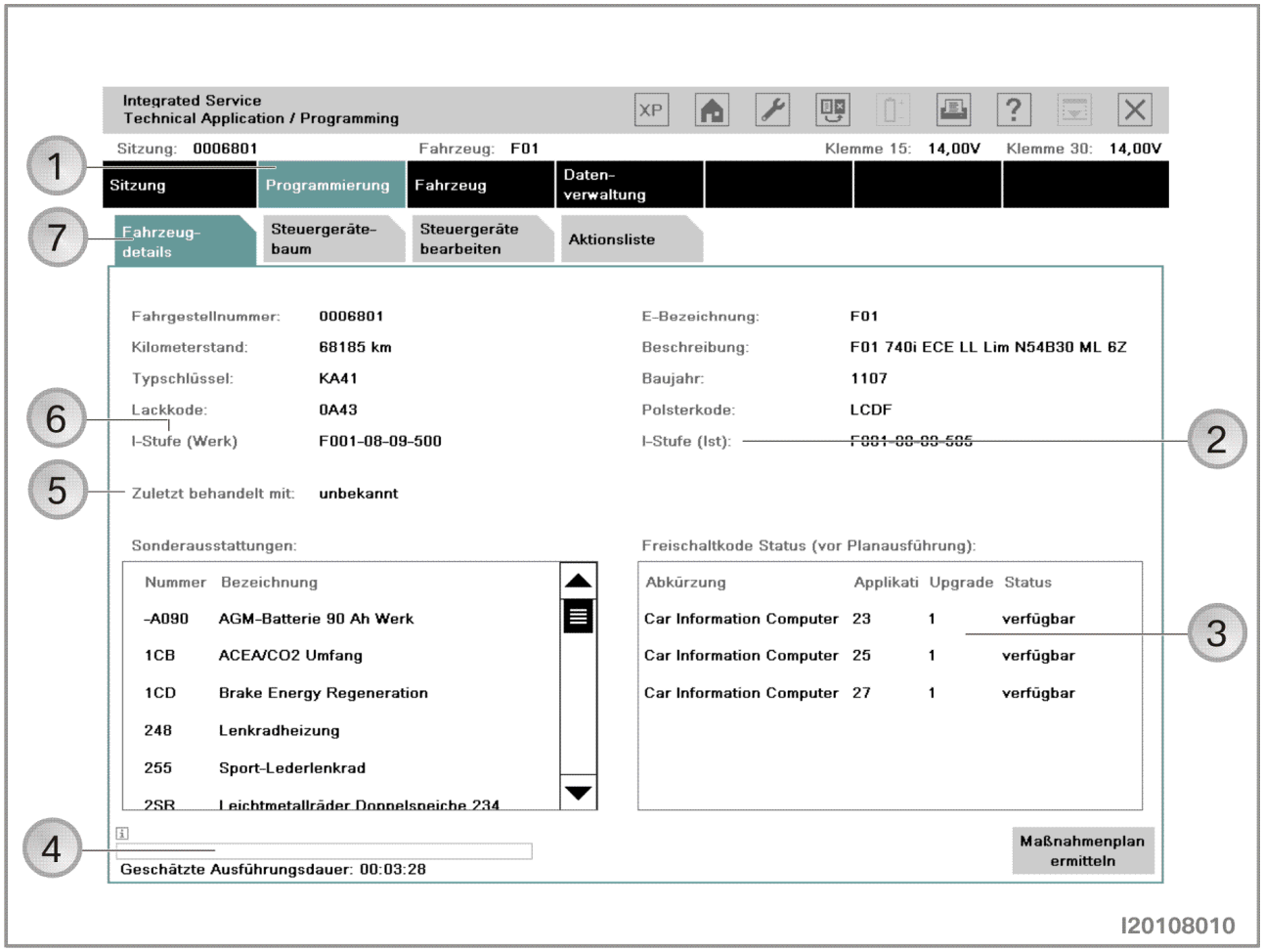
The measures plan can be expanded by the following actions:

- Carry out conversion
- Carry out vehicle actions
- Prepare for control module replacement
- Programs control module
- Encode control module.

The actions can be selected as follows:

- Under the "Process control modules" tab by directly selecting the actions or clicking on the control module
- Under the "Control module tree" tab by clicking on the control module.

Connection to vehicle is set up automatically:



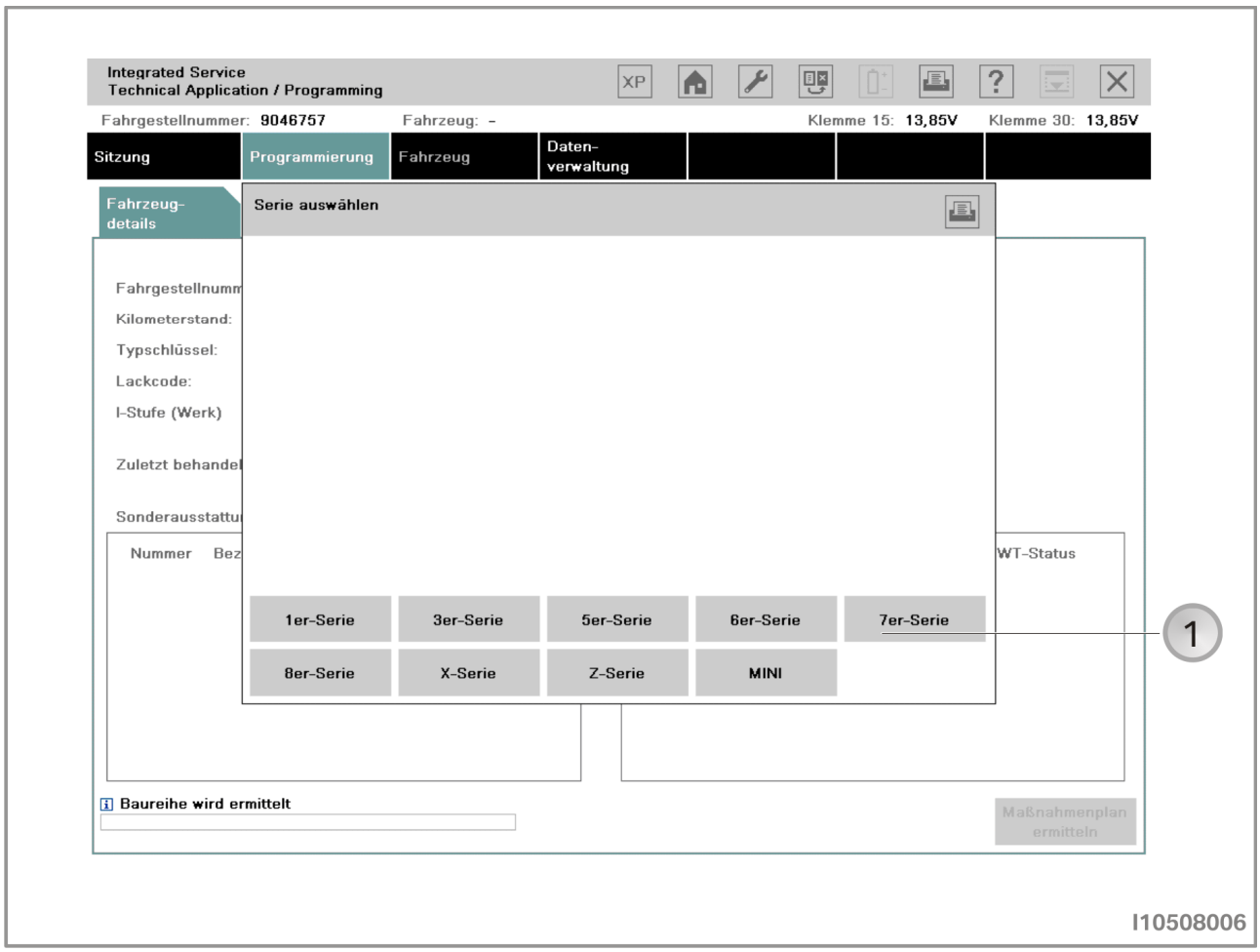
Index	Screen element	Index	Screen element
1	"Programming" menu	2	I-stage (actual), shows current I-stage of vehicle
3	Enable code status, status of enable code used or required in vehicle	4	Progress bar, shows processing progress
5	Last processed with, sShows the Progman or ISTA/P version, with which the vehicle was last processed	6	I-stage (factory), shows the I-stage with which the vehicle was produced
7	"Vehicle details" tab		

Follow and confirm the instructions provided by the programming system.

By reading out the vehicle details it is possible to determine whether the vehicle corresponds to the current software status. Unnecessary vehicle programming can be avoided in this way.

The native measures plan is determined after the connection to the vehicle has been set up successfully. This is shown under the "Programming" menu button.

Selecting vehicle manually:

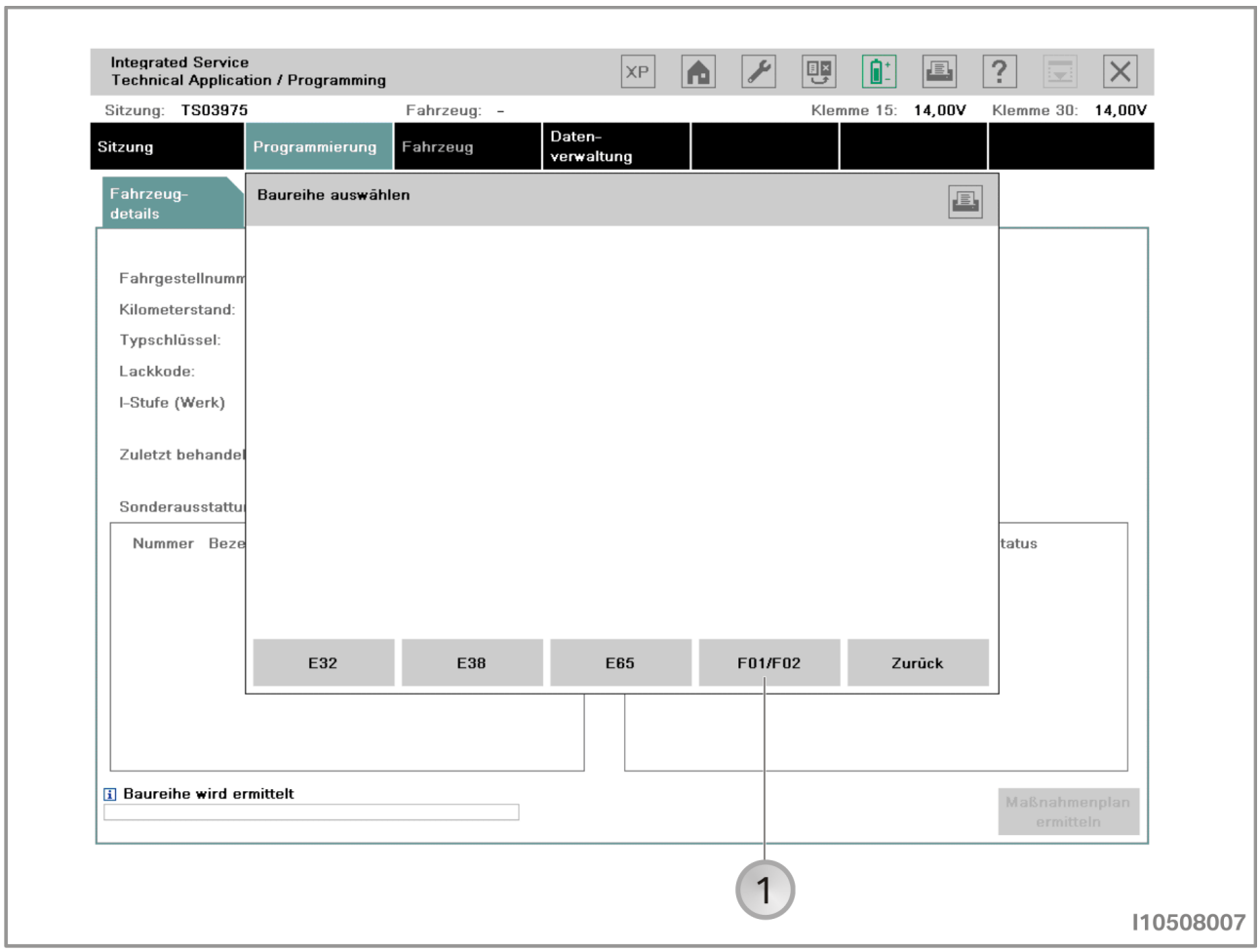


Index	Screen element
1	"Product line" button, product line selection

If automatic recognition of the model series fails, you will be requested to enter the vehicle identification number.

The vehicle can also be determined manually. For this purpose, select the product line by clicking on the corresponding button.

Selecting model series manually:

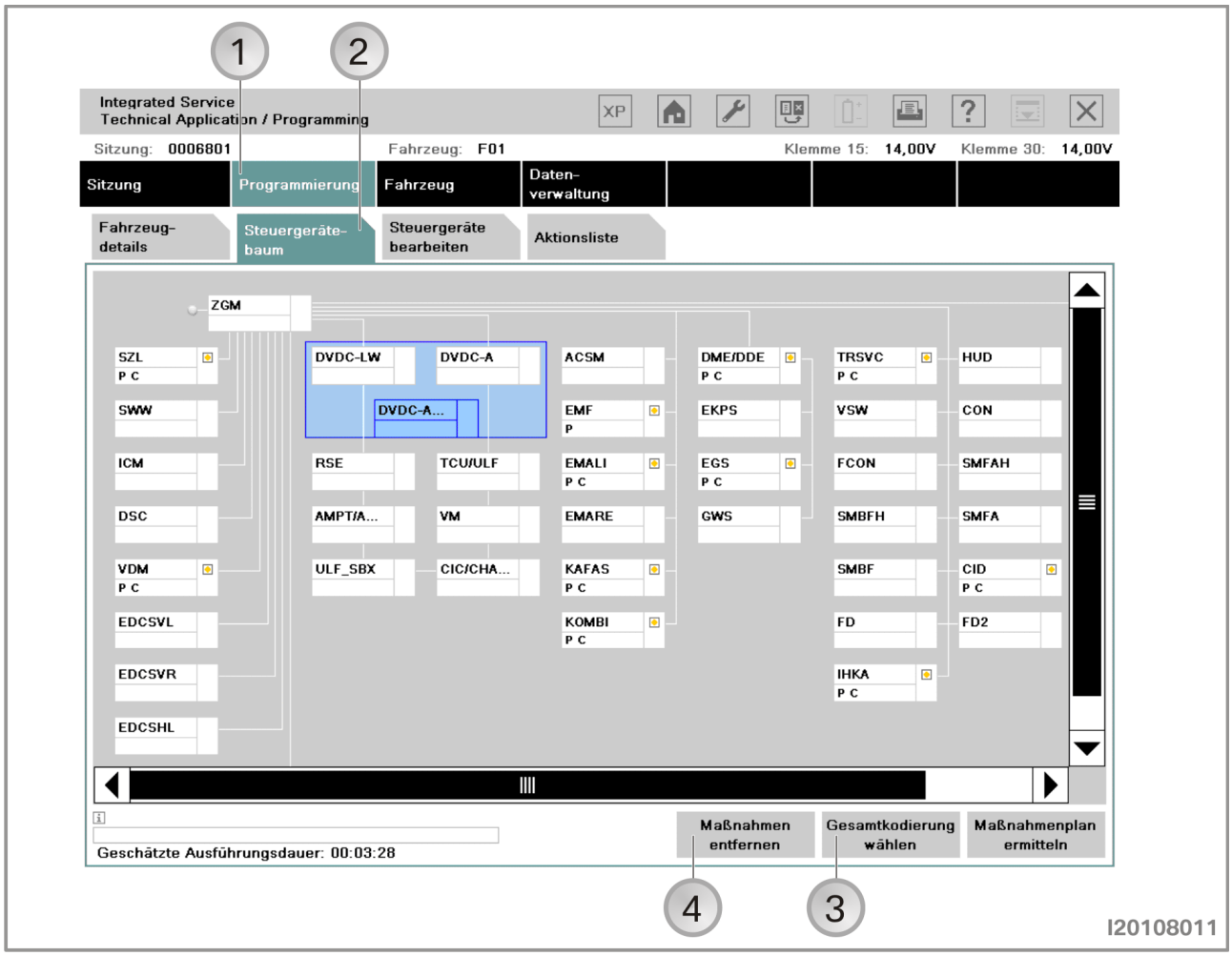


Index	Screen element
1	"Model series" button, model series selection

Select the model series for the connected vehicle by clicking the corresponding button.

Control module tree:

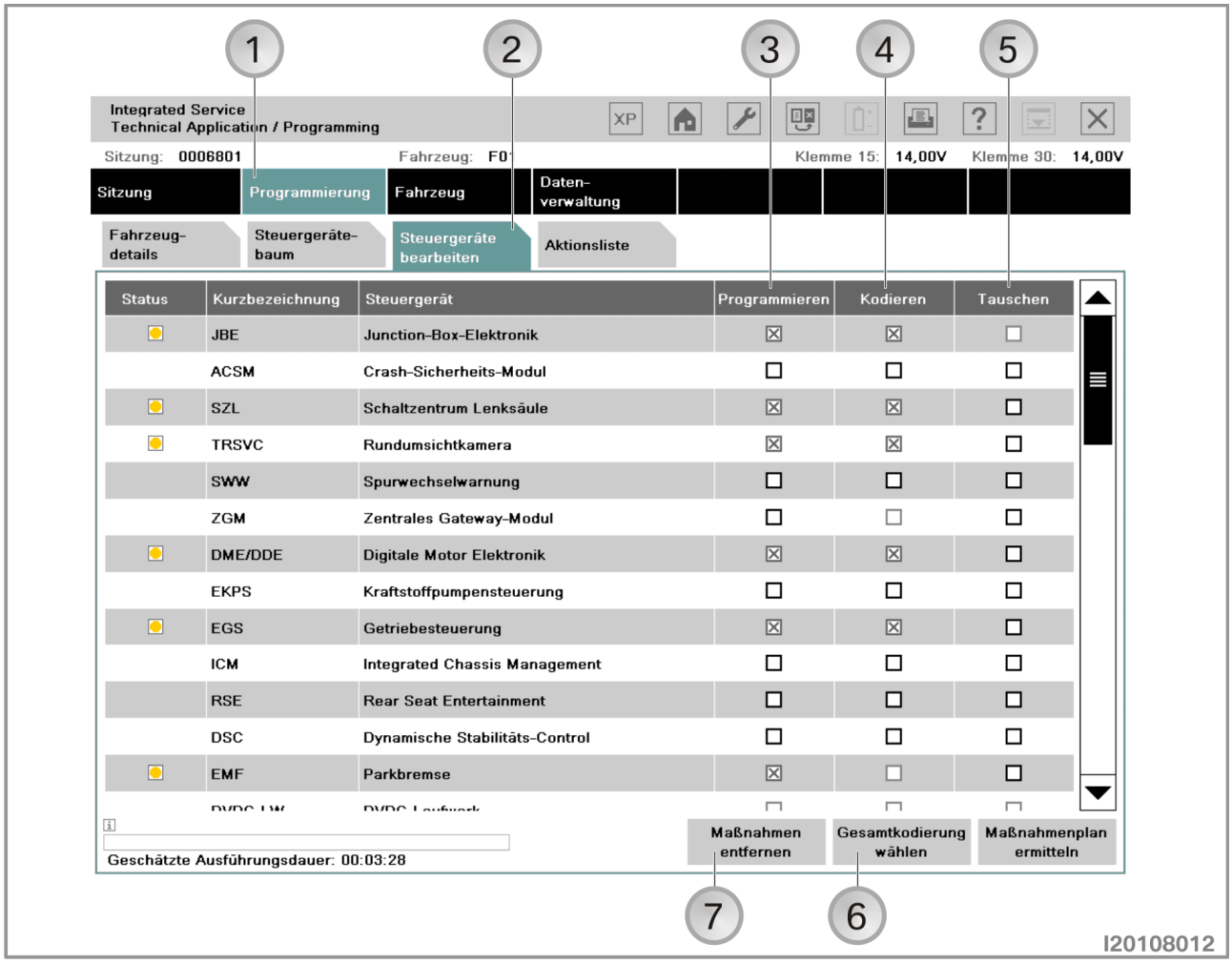
The control module tree shows the control units fitted in the vehicle corresponding to the topology. Each control module is shown as linked to the corresponding bus. Compound control modules are shown within a light blue area.



Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Control module tree" tab, graphic representation of the control module tree
3	"Select complete coding" button, selects complete coding of the vehicle	4	"Remove actions" button

All actions determined based on the context are removed by clicking on the "Remove actions" button. Control module actions relevant to I-stages cannot be selected manually.

Display under "Process control module":



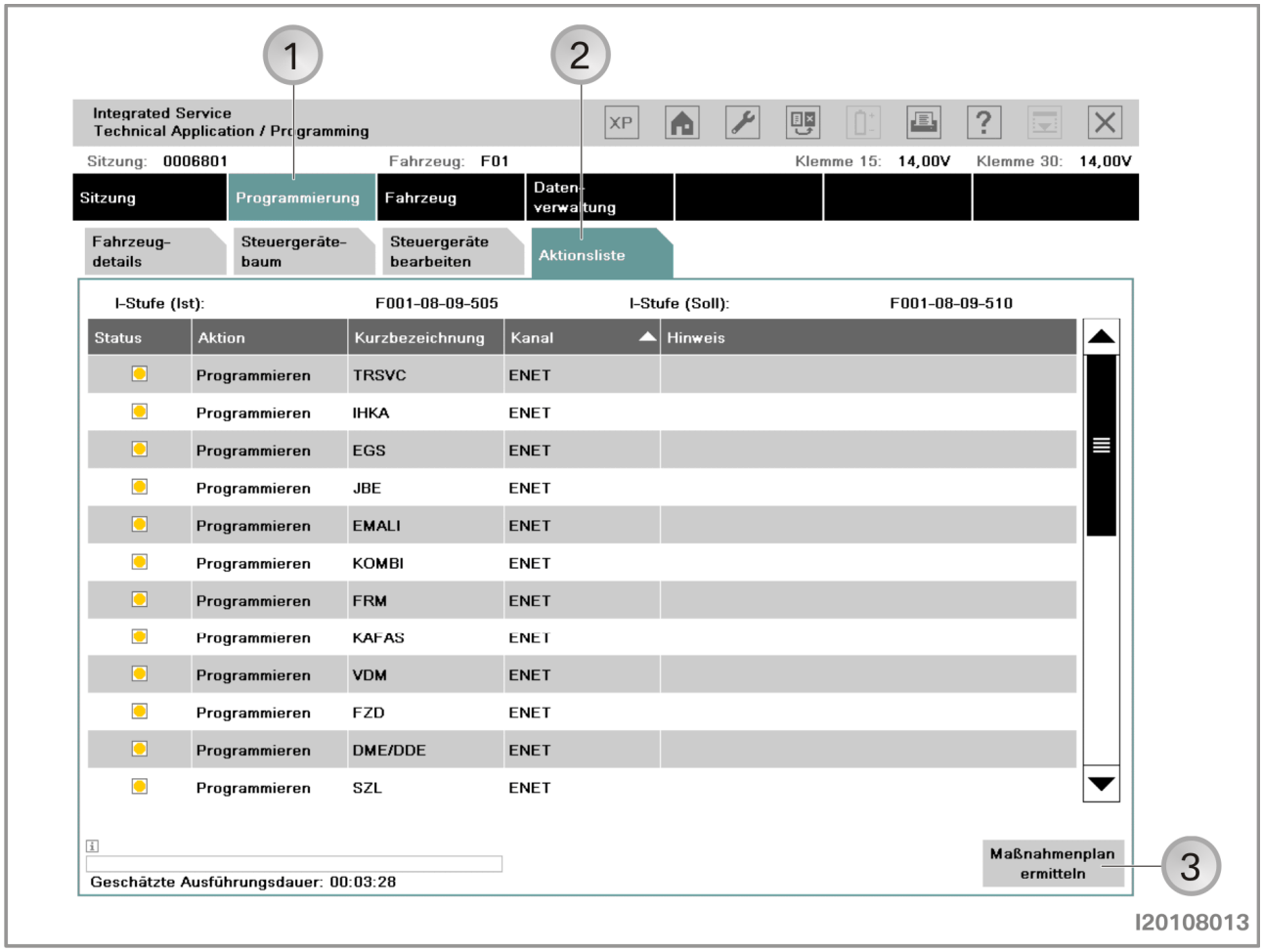
Index	Screen element	Index	Screen element
1	"Programming" button	2	"Process control modules" tab
3	Programming	4	Encoding
5	Replacement	6	"Select complete coding" button, selects complete coding of the vehicle
7	"Remove actions" button		

The actions ("Programming", "Encoding" or "Replacing") available for the control modules can be selected directly.

Note:

The "Determine measures plan" button is deactivated if determining the target context results in no action.

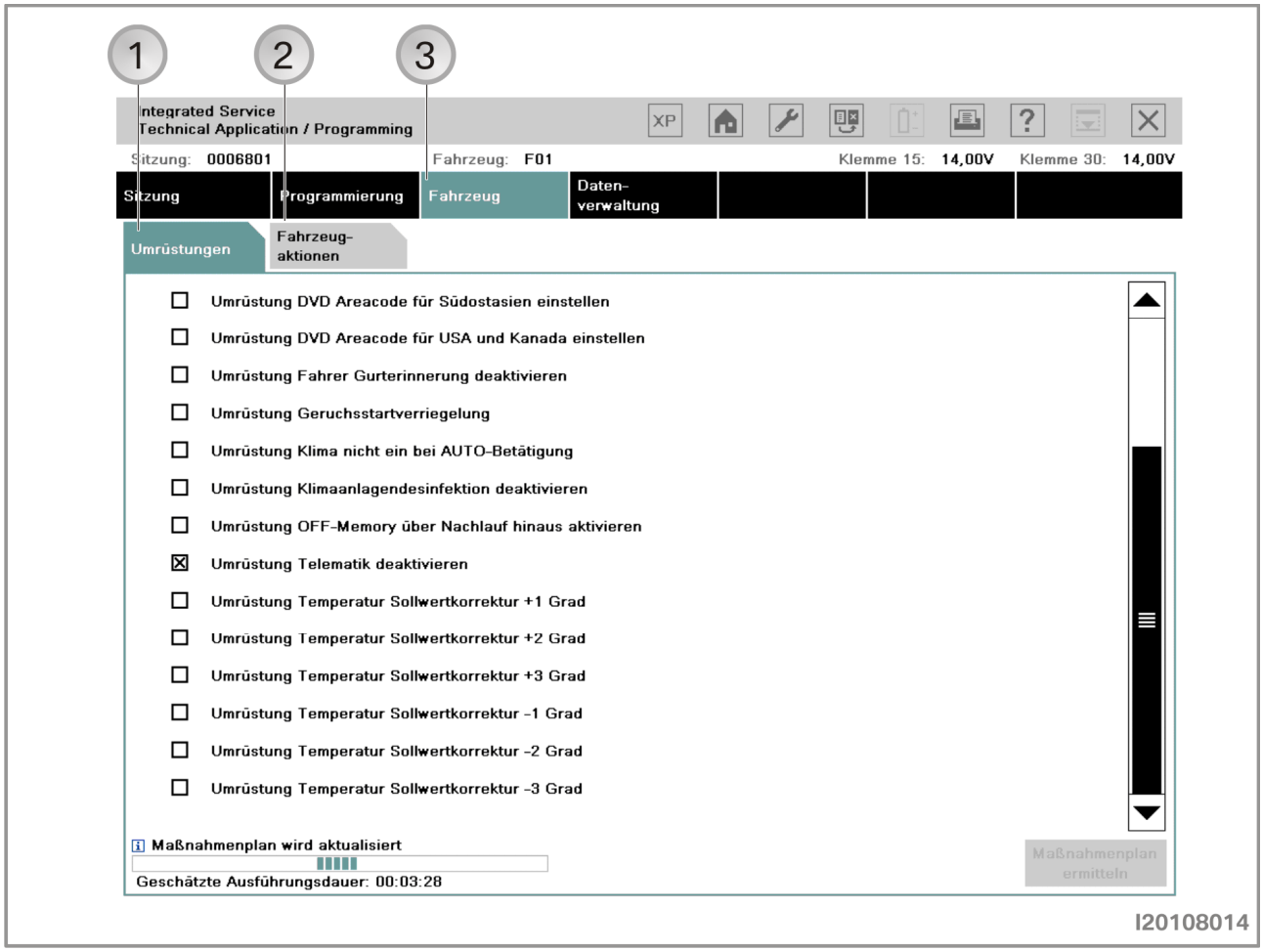
Action list:



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

The "Action list" is a summary of the planned actions. They are also shown in the "Measures plan". Information relating to the control module may also be shown (e.g. control module can no longer be programmed).

Vehicle menu:



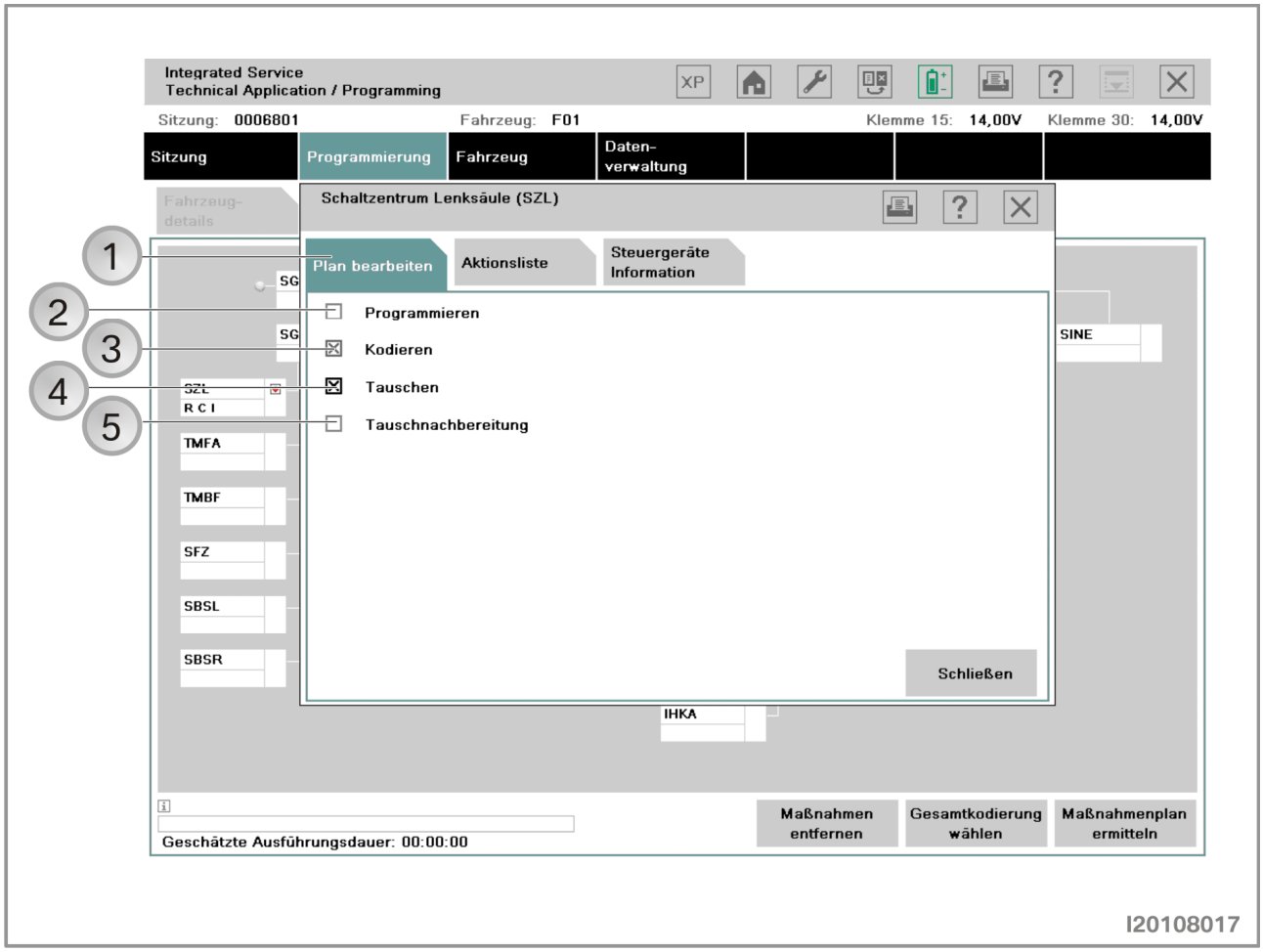
Index	Screen element	Index	Screen element
1	"Conversions" tab: Shows retrofits and conversions, see Retrofits and conversions	2	"Vehicle actions" tab: • Clear fault memory • Select complete coding • Start system time of all airbag control modules.
3	"Vehicle" menu		

The retrofits and conversions are listed under the "Conversions" tab in the "Vehicle" menu. All retrofits are shown first, followed by the possible conversions available for the connected vehicle.

Note:

Some retrofits and conversions require the entry of IBAC enable codes, see Retrofits and conversions, "Procedure for IBAC enable codes".

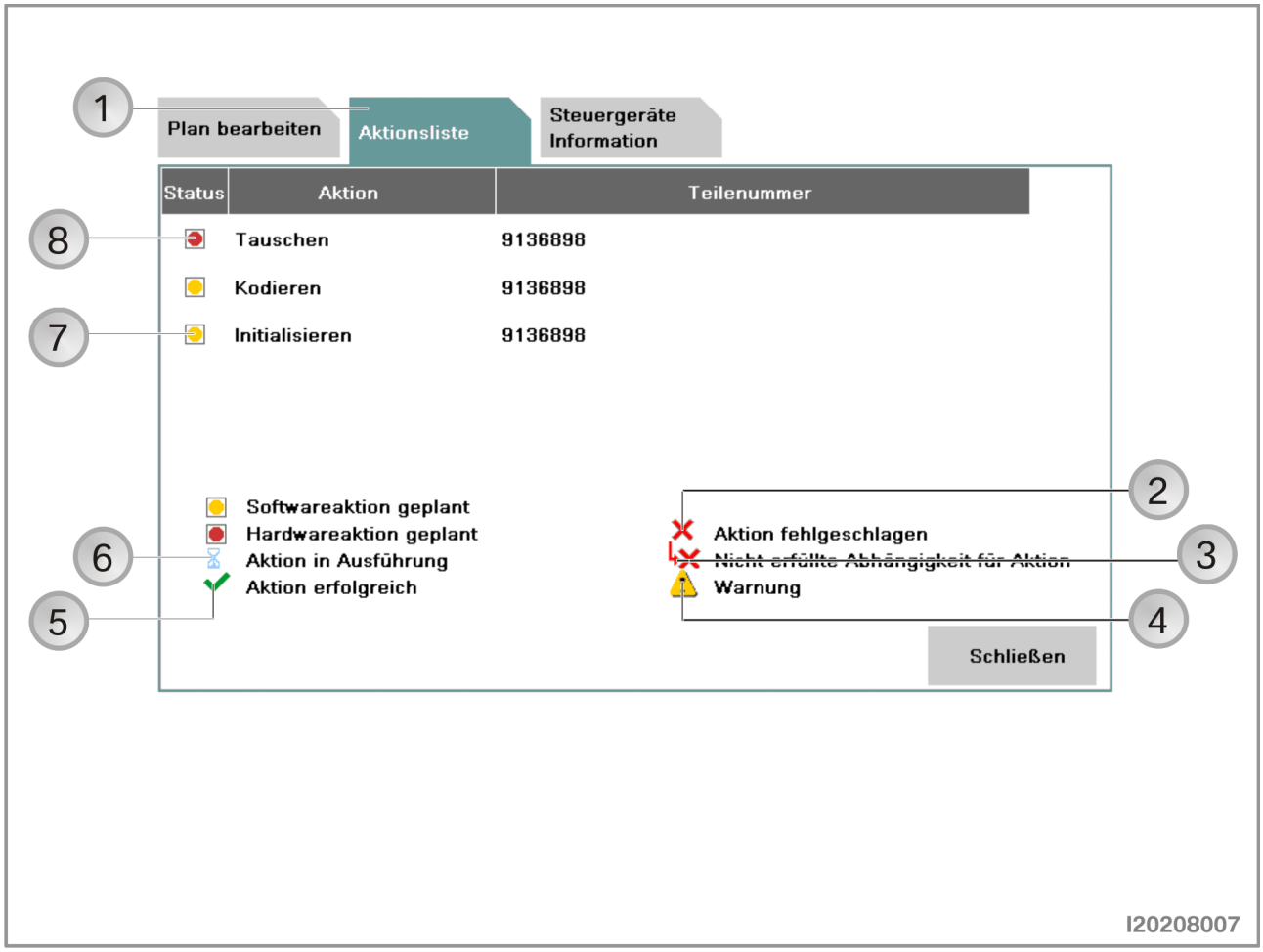
Dialogue box after clicking on the control module in "Process control module" or the control module in the "Control module tree":



Index	Screen element	Index	Screen element
1	"Edit plan" tab	2	Programming, programs control module
3	Encoding, encodes control module	4	Replace, replaces control module
5	Replacement follow-up, follow-up procedure for control module that has already been replaced		

The available actions for a control module are individual. They may differ from control module to control module depending on which actions are defined.

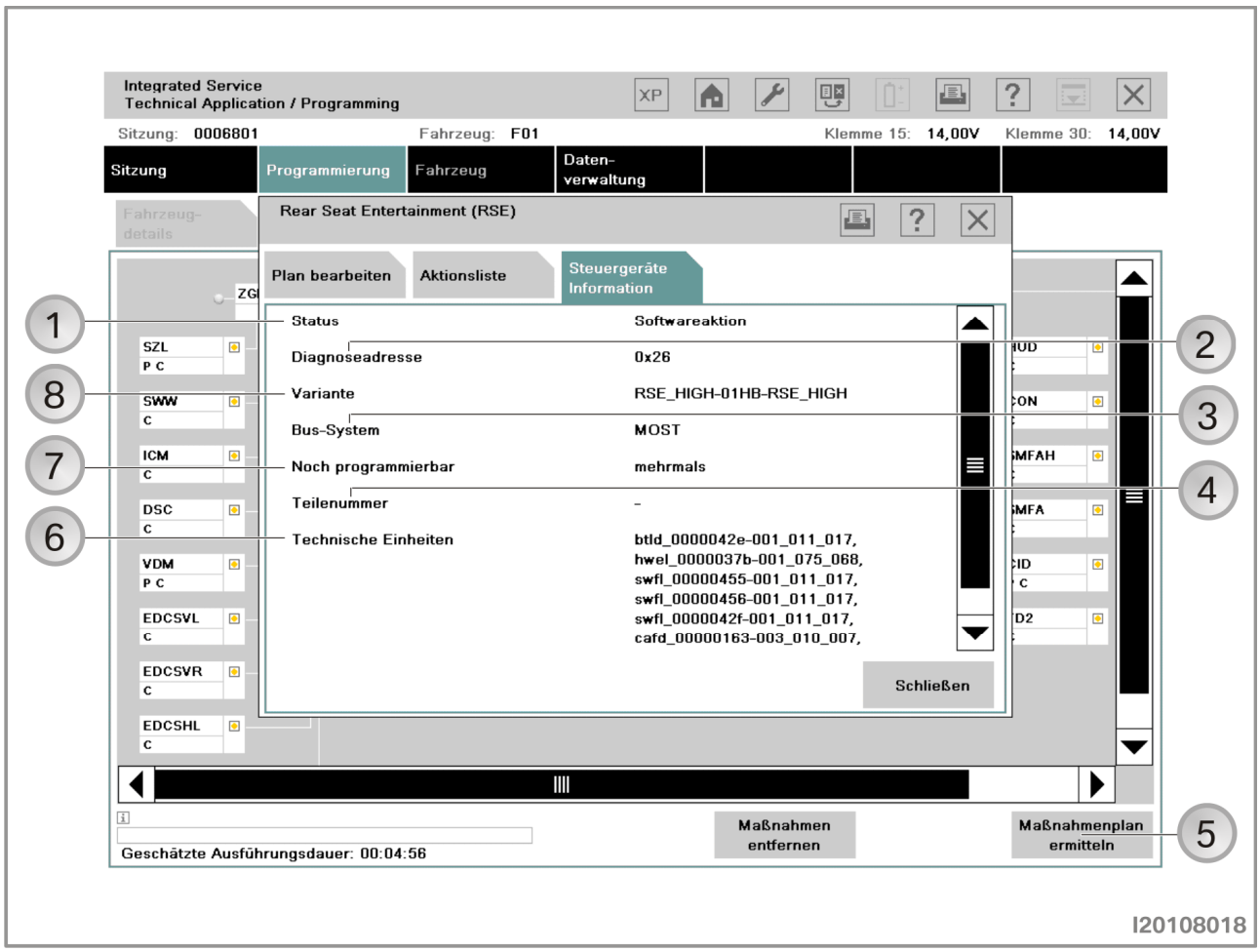
Extract from display under "Action list":



Index	Screen element	Index	Screen element
1	"Action list" tab	2	Symbol "Action failed"
3	Symbol for "Conditions for action not met" (e.g. control module was not replaced)	4	Symbol for "Warning"
5	Symbol for "Action successful"	6	Symbol for "Action in progress"
7	Symbol for "Software action planned" (e.g. encoding)	8	Symbol for "Hardware action planned" (e.g. replace control module)

The planned actions are shown together with their respective status by selecting the "Action list" tab.

Display under "Control module information":



Index	Screen element	Index	Screen element
1	Status, planned action	2	Diagnosis address of control module
3	Bus system to which the control module is connected	4	Part number of control module
5	"Determine measures plan" button	6	Technical units, software status in control module
7	Still programmable, Shows how often the control module can still be programmed	8	Control module variant

The information relating to the selected control module is shown by selecting the "Control module information" tab. In addition to the planned action and other relevant data, it also shows how often the control module can still be programmed.

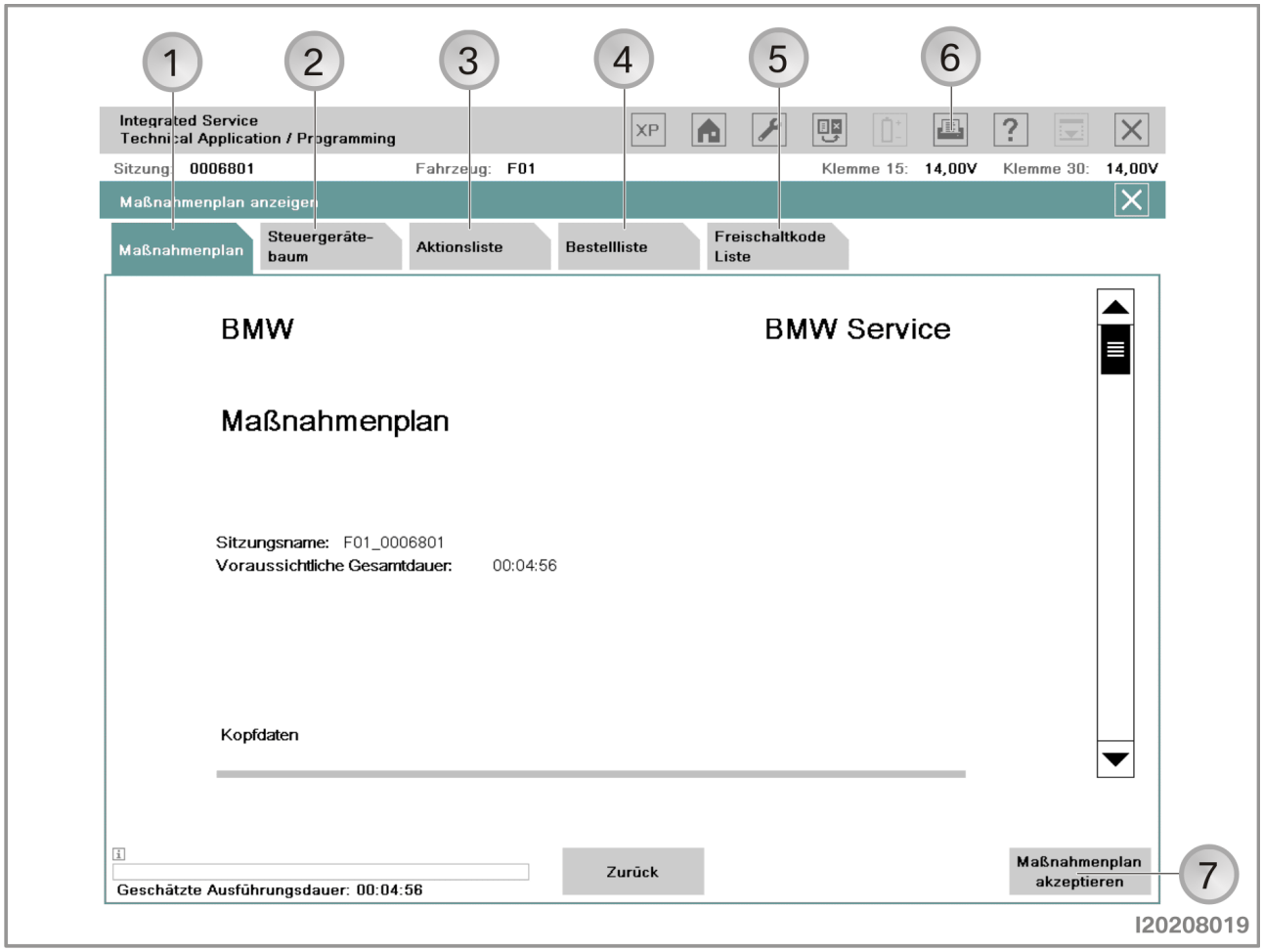
Note:

The "Determine measures plan" button is deactivated if no actions are to be selected.

Determine measures plan

User action	Result
Select "Determine measures plan".	
	The "Measures plan", "Control module tree", "Action list", "Order list" and "Enable code list" tabs are shown.
	The measures plan is shown in the menu window. Control modules that are to be processed are identified by a yellow symbol. A red symbol indicates replacement or installation of a control module. No action is planned for the control module if no symbol is shown. The actions are indicated as follows: **P** Programming **C** Encoding **I** Initializing **M** Installing **R** Replacing **U** Removing.
Select "Measures plan" tab.	
	The measures plan is shown in the print view.

Measures plan in print view:



Index	Screen element	Index	Screen element
1	"Measures plan" tab, shows measures plan in print view	2	"Control module tree" tab, shows the control module tree together with the planned actions
3	"Action list" tab, shows the planned actions in a table	4	"Order list" tab, shows control modules to be ordered
5	"Enable code list" tab, shows the enable codes used	6	"Print" button, prints the measures plan
7	"Accept measures plan" tab, executes measures plan and programs vehicle		

The measures plan contains actions that need to be carried out in order to eliminate a vehicle fault. In addition to the determined actions, it also shows the vehicle details, the session name and the ISTA/P version used.

Executing measures plan and programming vehicle

User action	Result
Print measures plan.	
Select "Accept measures plan".	
	The measures plan is shown in the menu window. Control modules that did not respond are indicated without a colored symbol. Control modules that are to be processed are identified by a yellow symbol. A red symbol indicates replacement or installation of a control module. No action is planned for the control module if no symbol is shown.
	The "Control module tree" and "Action list" tabs are shown.
Observe and acknowledge safety information on programming.	
	Measures plan is executed.
	Plan is followed up.
Carry out initialization and instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Print final report.	

Control module replacement

The control modules to be replaced are determined by the measures plan. The request to replace a control unit is integrated in the measures plan procedure. The new control modules must be encoded after installation to ensure they operate correctly.

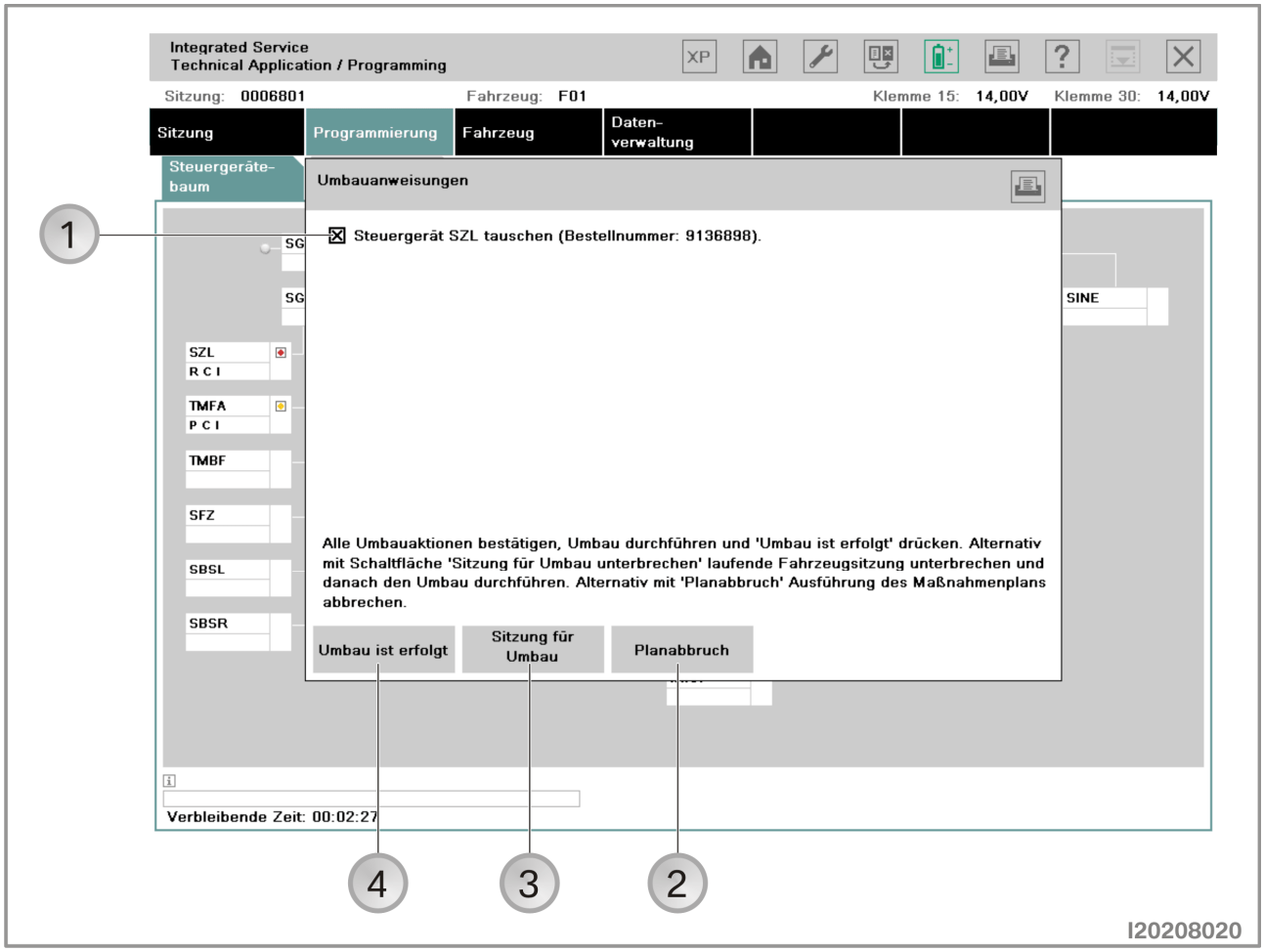
The control module replacement procedure can be carried out as follows and is described on the following pages:

- Control module replacement without interrupting the session
- Control module replacement with session for modification
- Control module replacement with plan abort.

Note:

When replacing, refer to the technical documentation for the control module.

Modification instructions for control module replacement:



Index	Screen element	Index	Screen element
1	Confirmation "Replace control module"	2	"Plan abort" button, cancels session
3	"Modification session" button, control module replacement with session for modification	4	"Modification done" button, control module replacement without interrupting the session

Select the appropriate control module replacement.

Control module replacement without interrupting the session

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Replace or install control modules.	
Confirm replacement request.	
Click on "Modification done" button.	
	Measures plan is continued.
	Plan is followed up.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

Control module replacement with session for modification

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Click on "Session for modification" button.	
	Session is stored and ended
Replace or install control modules.	
Start new session.	
	Stored session is found.
Select stored session.	
Confirm replacement request and click on "Modification done" button.	
	The measures plan is continued, no further actions can be added.
	Plan is followed up.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

Control module replacement with plan abort

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Click on "Plan abort" button.	
	Session is terminated
Replace or install control modules.	
Start new session.	
	Dialogue box "Replaced control modules" is shown.
Answer the question "Have control modules been replaced?" with "Yes".	
	Target context is determined.
Select replaced control modules in "Control module tree" or under "Process control modules" and select "Replacement follow-up". Click on "Determine measures plan" button.	Further actions can be added.
	The measures plan is determined and executed.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

The question "Have control modules been replaced?" at the start of a new session is to be answered with "Yes". A corresponding replacement follow-up procedure is then executed as part of the measures plan.

Programming BMW navigation systems "BMW Navigation" CD

The CD contains all "BMW Navigation" software versions for model series E38, E39, E46, E52, E53, E65, E66, E83, E85 and E86. Keep this CD ready to hand for programming the navigation system on these model series.

The navigation system for model series E60, E61, E63, E64, E70, E71, E81, E82, E87, E88 as well as E90, E91, E92, E93, F01 and F02 is not programmed using the CD "BMW Navigation" but rather only by using the programming system ISTA/P.
The navigation computer automatically recognizes the required version.

When installing a new navigation computer in a vehicle with radio navigation (option 606), a special procedure must be followed (see Repair Instructions "Notes on Using Navigation Computers").

E38, E39, E46, E52, E53, E83, E85 and E86 with navigation system (option 609):
The current "BMW Navigation" CD must be used on vehicles with date of production after September 2001 and on all vehicles with "split-screen software":

Version 1
The navigation computer Mk3 with navigation system (option 609) has operating software V17 or earlier installed. The current operating software with the retrofit package "split-screen software" (subject to charge) should be retrofitted:

- Pay attention to installation instructions provided in the cover of the operating software CD.
- Load current operating software CD for navigation system.
- Installation will start automatically
- The CD is ejected when the installation is complete. Installation can take up to 7 minutes
- Remove CD
- Press the rotary push button to restart the navigation computer (please refer to the instructions displayed on the on-board monitor).
- The instruction "Load V17 or the Key CD" appears in the display of the on-board monitor.
- Load Key CD
- The Key CD is ejected when the installation is complete. Installation can take up to 2 minutes.
- Remove Key CD
- The navigation computer is then automatically restarted.

Version 2
The navigation computer Mk3 in a vehicle with navigation system (optional extra 609) should be replaced in the event of a complaint. A new navigation computer Mk3 with the current operating software should be installed:

- Read out software status.
- Install new navigation computer in vehicle. See Electronic Parts Catalogue (EPC).
- Pay attention to installation instructions provided in the cover of the operating software CD.
- Insert current navigation system operating software CD.
- The installation will start automatically.
- The CD is ejected when the installation is complete. The installation can take up to 7 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 navigation computer (please refer to BMW ISTA workshop systems).
- The navigation computer must go into sleep mode. To do this, switch the ignition off. The "Power LED" on the navigation computer will go out after one minute.

The CD "BMW Navigation V17.1" must be used for vehicles with date of production before September 2001 and Mk3 navigation computer without "split-screen software".

E60, E61, E63, E64, E65, E66, E70, E71, E81, E82, E85, E86, E87, E88, E90, E91, E92 and E93 with JNAV navigation system (national version 807 and option 609):
On vehicles produced before 28.02.2007, first program the JNAV control module with initial software before 03/07. To do this, update the control module to status 03/07 with the PCMCIA card. Then program the vehicle with ISTA/P (the JNAV control module is no longer listed in the measures plan!) and perform complete encoding.

Procedure for all model series

Note:

The basic requirement for efficient programming is that the vehicle is correctly prepared. When programming and encoding the navigation system, refer to the documentation "Preparing Vehicle Programming and Finishing Off".

User action	Result
E65/E66: Change to navigation menu via Control Display.	
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 (on the control display in E65 and E66, on the on-board monitor in E38, E39, E46, E52 and E53 and on the central information display in the E83, E85 and E86).	

Important!

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 programming, the screen of the Control Display, on-board monitor or Central Information Display may flicker.

Note:

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

Locations of OBD and MOST, connection options in BMW vehicles

The following overview shows which ICOM interfaces are approved for vehicle programming on which model series:

Model series	Vehicle interface (connection via OBD socket)		MOST compatibility (multichannel programming)
	ICOM A and C	ICOM A	ICOM A and B (Only possible if MOST direct access port fitted)
F01, F02	-	X	-
E81, E82, E87, E88	-	X	X
E90, E91, E92, E93	-	X	X
E60, E61, E63, E64	-	X	X
E65, E66	-	X	X
E70, E71	-	X	X
E83	-	X	-
E85, E86	-	X	-
E31	X	X	-
E32	X	X	-
E34	X	X	-
E36	X	X	-
E38	X	X	-
E39	X	X	-
E46	X	X	-
E52	-	X	-
E53	-	X	-

Use of ICOM
All BMW model series can be processed with the ICOM A, B and C modules.
For illustrations and information on the ICOM interfaces, see ICOM (Integrated Communication Optical Module)

Locations of OBD socket:

F01 and F02
The OBD socket is located near the A-pillar in the driver's footwell.
E81, E82, E87 and E88
The OBD socket is located on the A-pillar in the driver's footwell.
E90, E91, E92 and E93
The OBD socket is located on the A-pillar in the driver's footwell.
E60 and E61
The OBD socket is located on the A-pillar in the driver's footwell.
E63 and E64
The OBD socket is located near the A-pillar in the driver's footwell.
E65 and E66
The OBD socket is located on the A-pillar in the driver's footwell.
E70 and E71
The OBD socket is located near the A-pillar in the driver's footwell.
E83
The OBD socket is located on the A-pillar in the driver's footwell.
E85 and E86
The OBD socket is located near the A-pillar in the driver's footwell.
Earlier model series are not described at present.

Important!

Pins that have been pushed back or have expanded in the OBD socket can cause communication problems between the BMW programming system and the vehicle. For this reason, you should check the contacts in the OBD socket before you connect a vehicle interface to the OBD socket.

Note:

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

Location of MOST direct access port:

E81, E82, E87 and E88
The MOST direct access port is in the left-hand footwell (viewed in the direction of travel).
E90, E9, E92 and E93
The MOST direct access port is in the left-hand footwell (viewed in the direction of travel).
E60 and E61
The MOST direct access port is located to the left of the glove compartment on left-hand drive vehicles and to the right of the glove compartment on right-hand drive vehicles.
E63 and E64
The MOST direct access port is located in the glove compartment.
E65 and E66
The MOST direct access port is located in the glove compartment.
E70 and E71
The MOST direct access port is located in the front passenger footwell, next to the footwell air vent.

Important!

The MOST direct access port can only be pulled out by approx. 2 to 3 cm. Otherwise, there is a risk of damaging the two fibre-optic cables.

Note:

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

Note:

There is no MOST direct access port on the E83, E85, E86 and earlier model series. These model series are programmed with ISTA/P only through the OBD socket. Use ICOM A for programming with ISTA/P.

Note:

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

- BMW Professional radio (RAD2)
- Multi-audio system controller (M-ASK) = BMW Business navigation system
- Car Communication Computer (CCC) = BMW Professional navigation system.

Note:

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

Note:

After use, seal the MOST direct access port again with the protective cap or the removable loop-shaped bridge.

Programming procedure MINI

The following pages contain descriptions of the programming procedure for the MINI model series.

Note:

The basic requirement for efficient programming is that the vehicle is correctly prepared. Please refer to the description "Vehicle programming and finishing off".

Read out vehicle data with ISTA/P.
See Section: Start new session with ISTA/P.

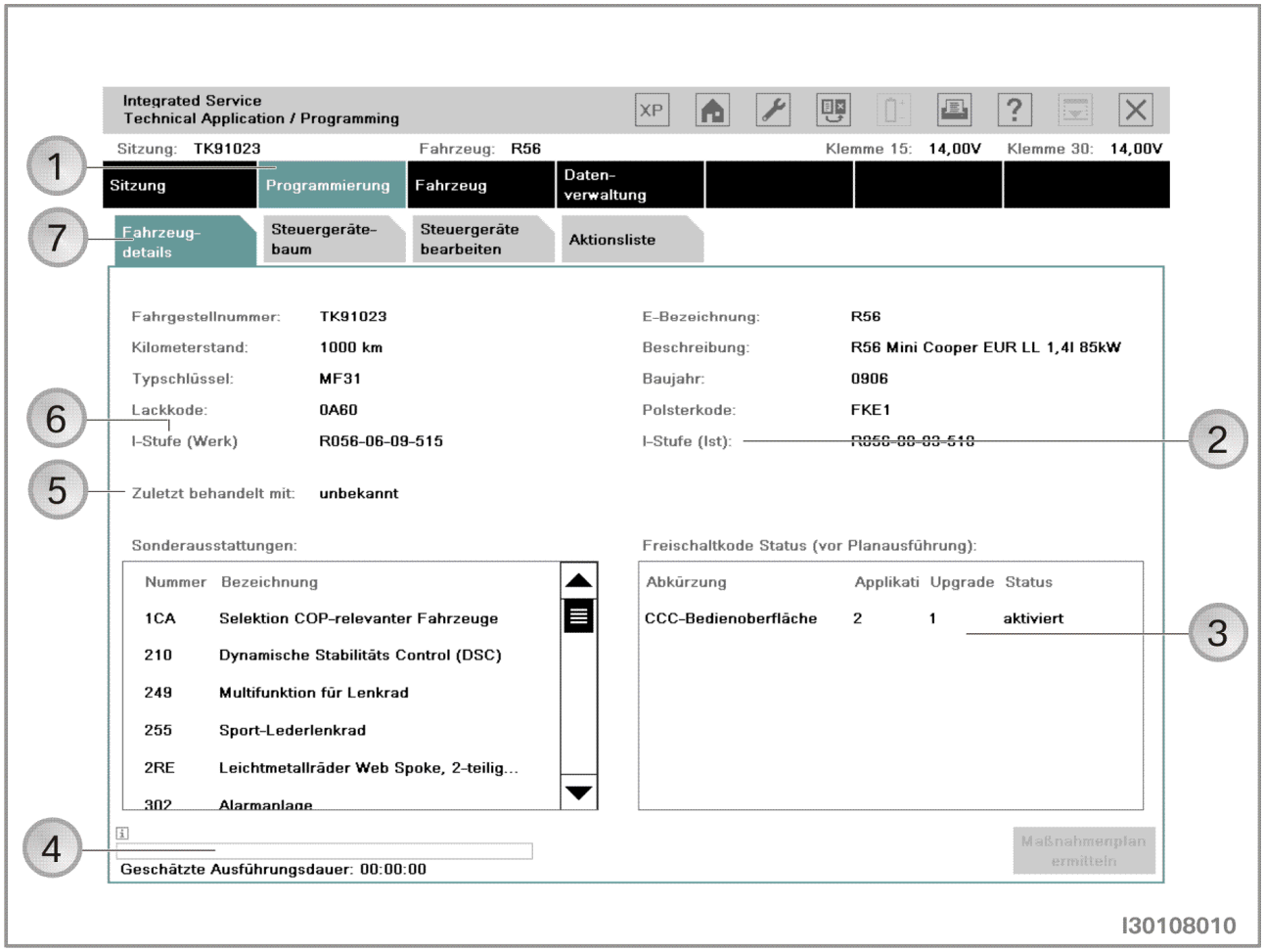
The measures plan can be expanded by the following actions:

- Carry out conversion
- Carry out vehicle actions
- Set CKM values (R50, R53 and R53)
  - Select "Vehicle" tab.
  - Select "CKM" tab.
  - Print CKM values.
- Prepare for control module replacement
- Programs control module
- Encode control module.

The actions can be selected as follows:

- Under the "Process control modules" tab by directly selecting the actions or clicking on the control module
- Under the "Control module tree" tab by clicking on the control module.

Programming procedure for the model series R50, R52, R53, R55 and R56



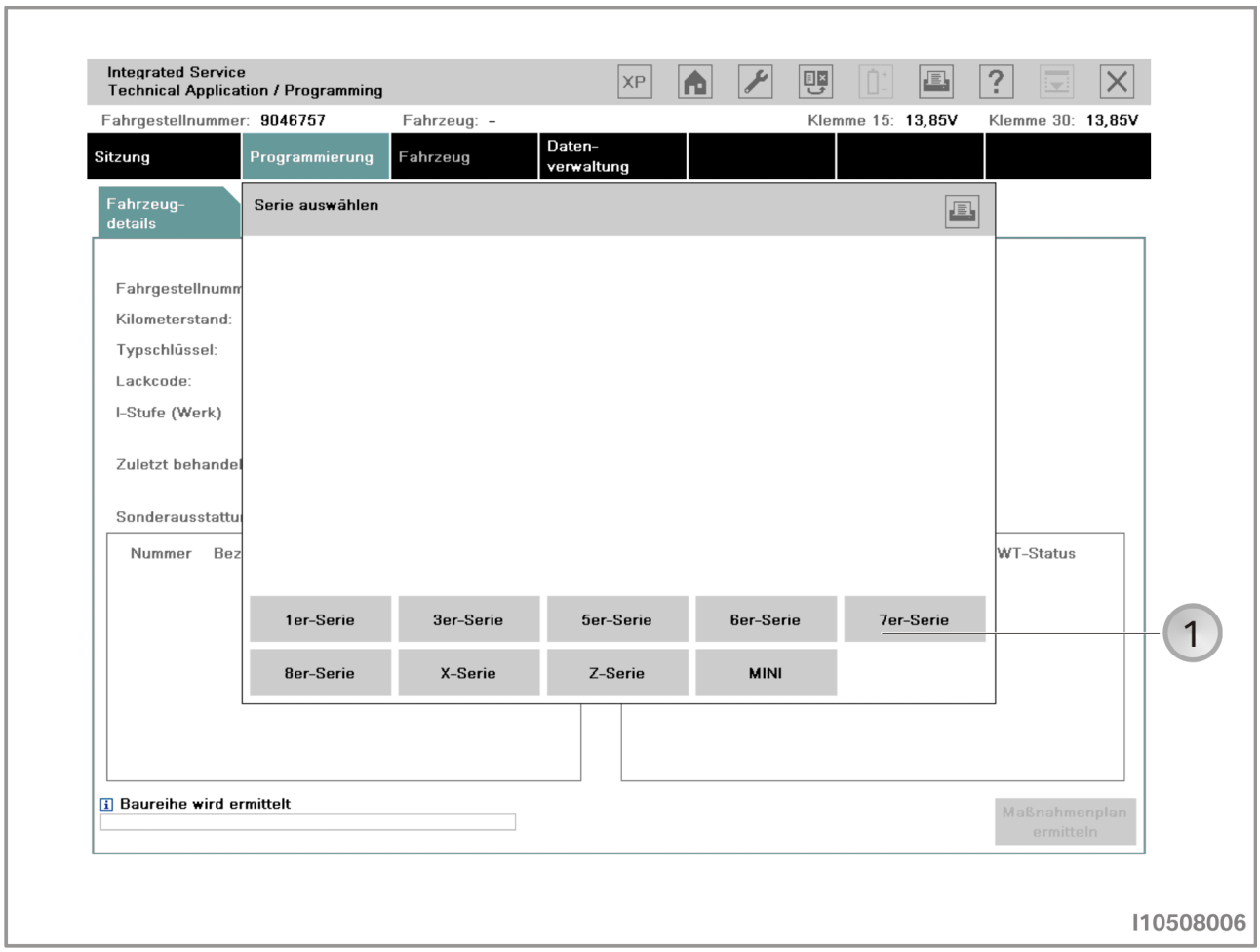
Index	Screen element	Index	Screen element
1	"Programming" menu	2	I-stage (actual), shows current I-stage of vehicle
3	Enable code status, status of enable code used or required in vehicle	4	Progress bar, shows processing progress
5	Last processed with, shows the Progman or ISTA/P version, with which the vehicle was last processed	6	I-stage (factory), shows the I-stage with which the vehicle was produced
7	"Vehicle details" tab		

Follow and confirm the instructions provided by the programming system.

By reading out the vehicle details it is possible to determine whether the vehicle corresponds to the current software status. Unnecessary vehicle programming can be avoided in this way.

The native measures plan is determined after the connection to the vehicle has been set up successfully. This is shown under the "Programming" menu button.

Selecting vehicle manually:

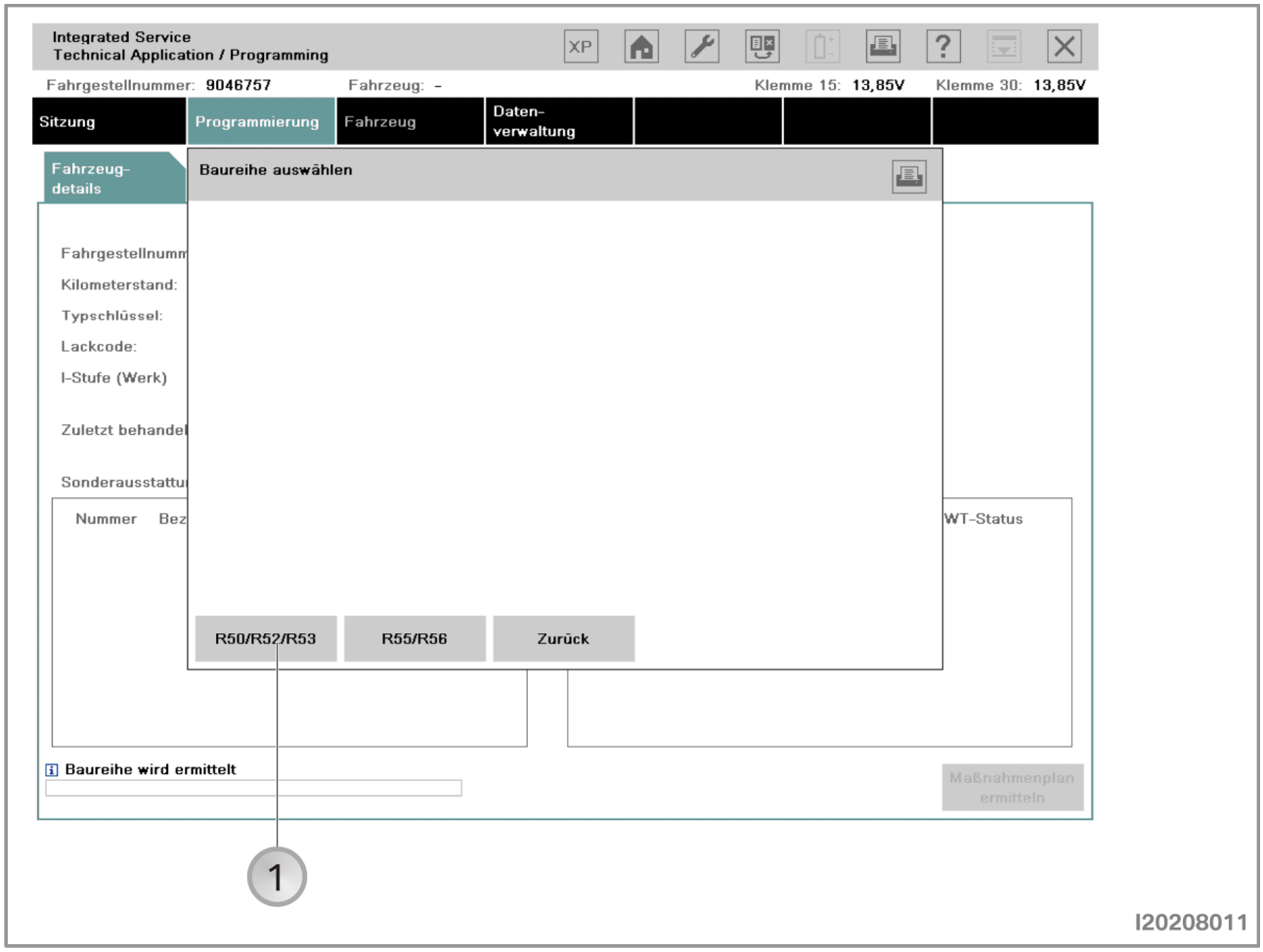


Index	Screen element
1	"Product line" button, product line selection

If automatic recognition of the model series fails, you will be requested to enter the vehicle identification number.

The vehicle can also be determined manually. For this purpose, select the product line by clicking on the corresponding button.

Selecting model series manually:

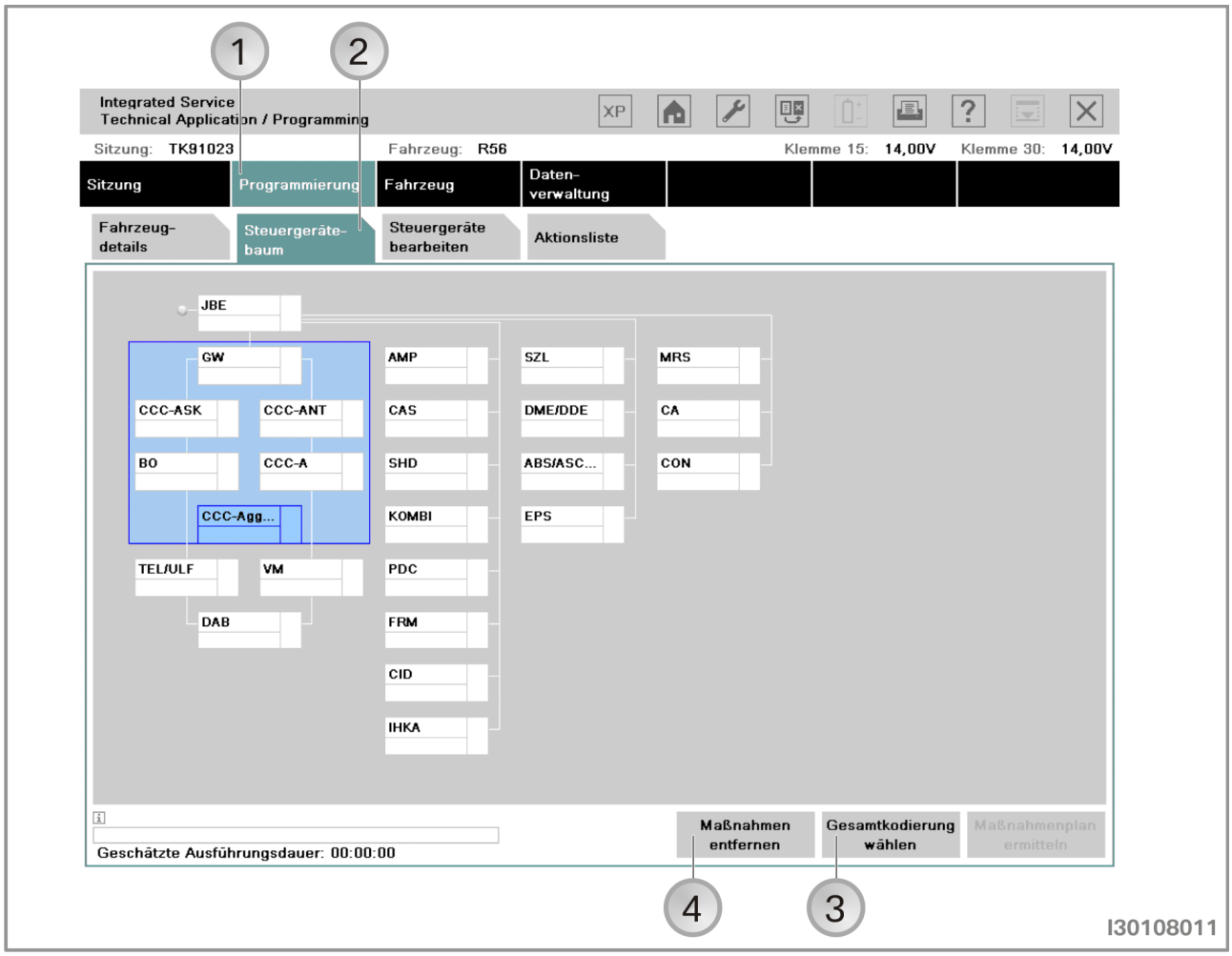


Index	Screen element
1	"Model series" button, model series selection

Select the model series for the connected vehicle by clicking the corresponding button.

Control module tree:

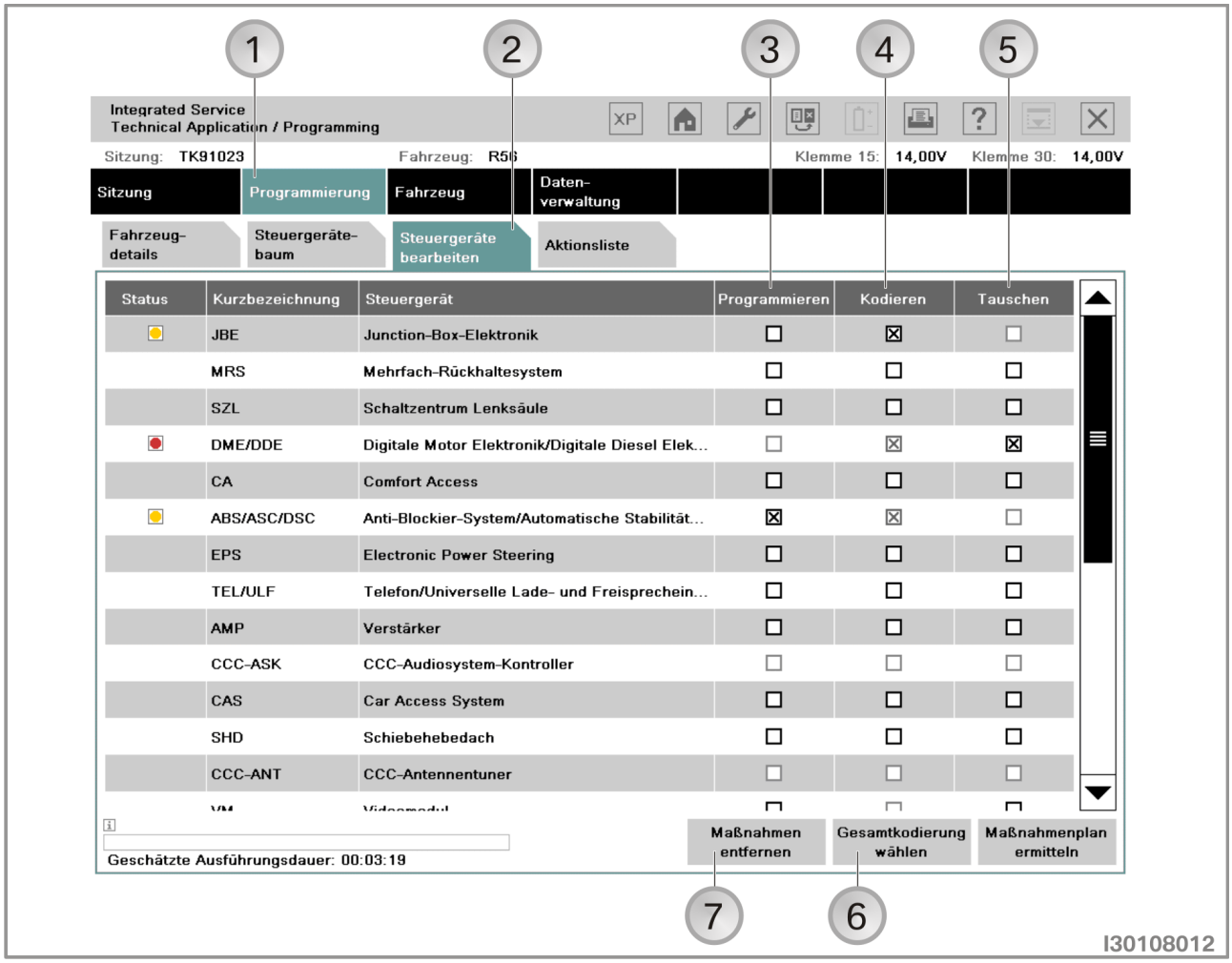
The control module tree shows the control units fitted in the vehicle corresponding to the topology. Each control module is shown as linked to the corresponding bus. Compound control modules are shown within a light blue area.



Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Control module tree" tab, graphic representation of the control module tree
3	"Select complete coding" button, selects complete coding of the vehicle	4	"Remove actions" button

All actions determined based on the context are removed by clicking on the "Remove actions" button. Control module actions relevant to I-stages cannot be selected manually.

Display under "Process control module":



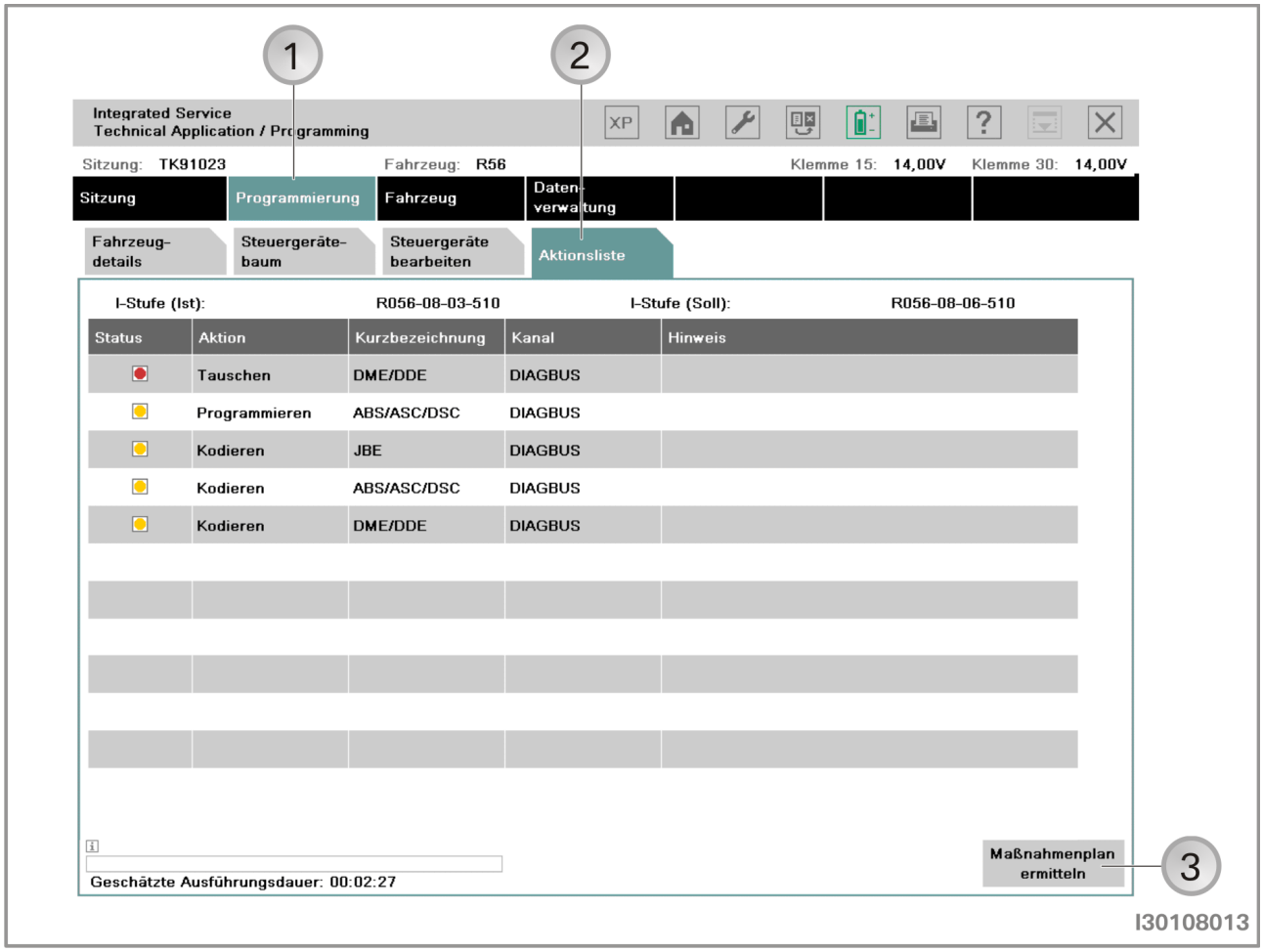
Index	Screen element	Index	Screen element
1	"Programming" button	2	"Process control modules" tab
3	Programming	4	Encoding
5	Replacement	6	"Select complete coding" button, selects complete coding of the vehicle
7	"Remove actions" button		

The actions ("Programming", "Encoding" or "Replacing") available for the control modules can be selected directly.

Note:

The "Determine measures plan" button is deactivated if determining the target context results in no action.

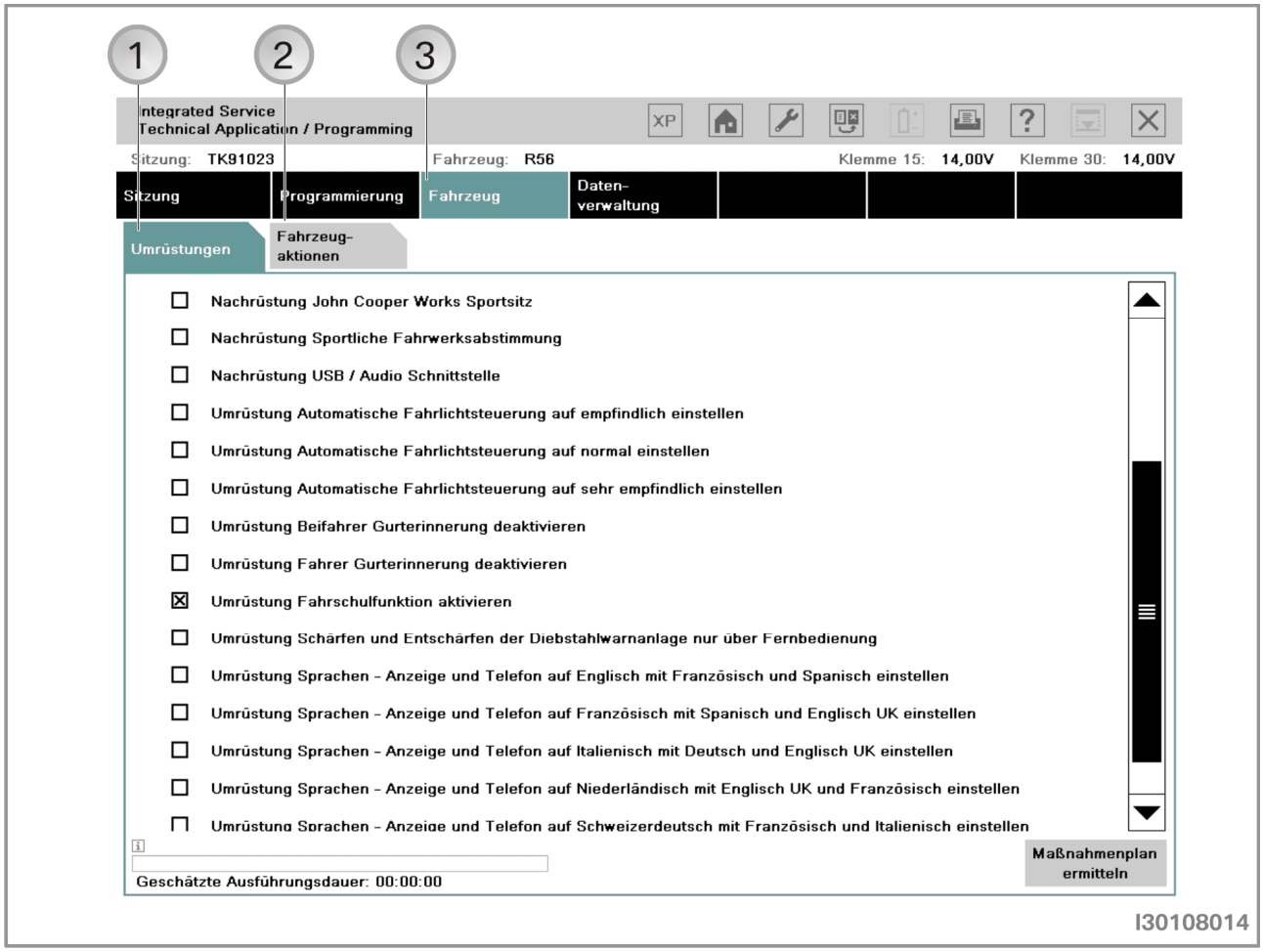
Action list:



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

The "Action list" is a summary of the planned actions. They are also shown in the "Measures plan". Information relating to the control module may also be shown (e.g. control module can no longer be programmed).

Vehicle menu:



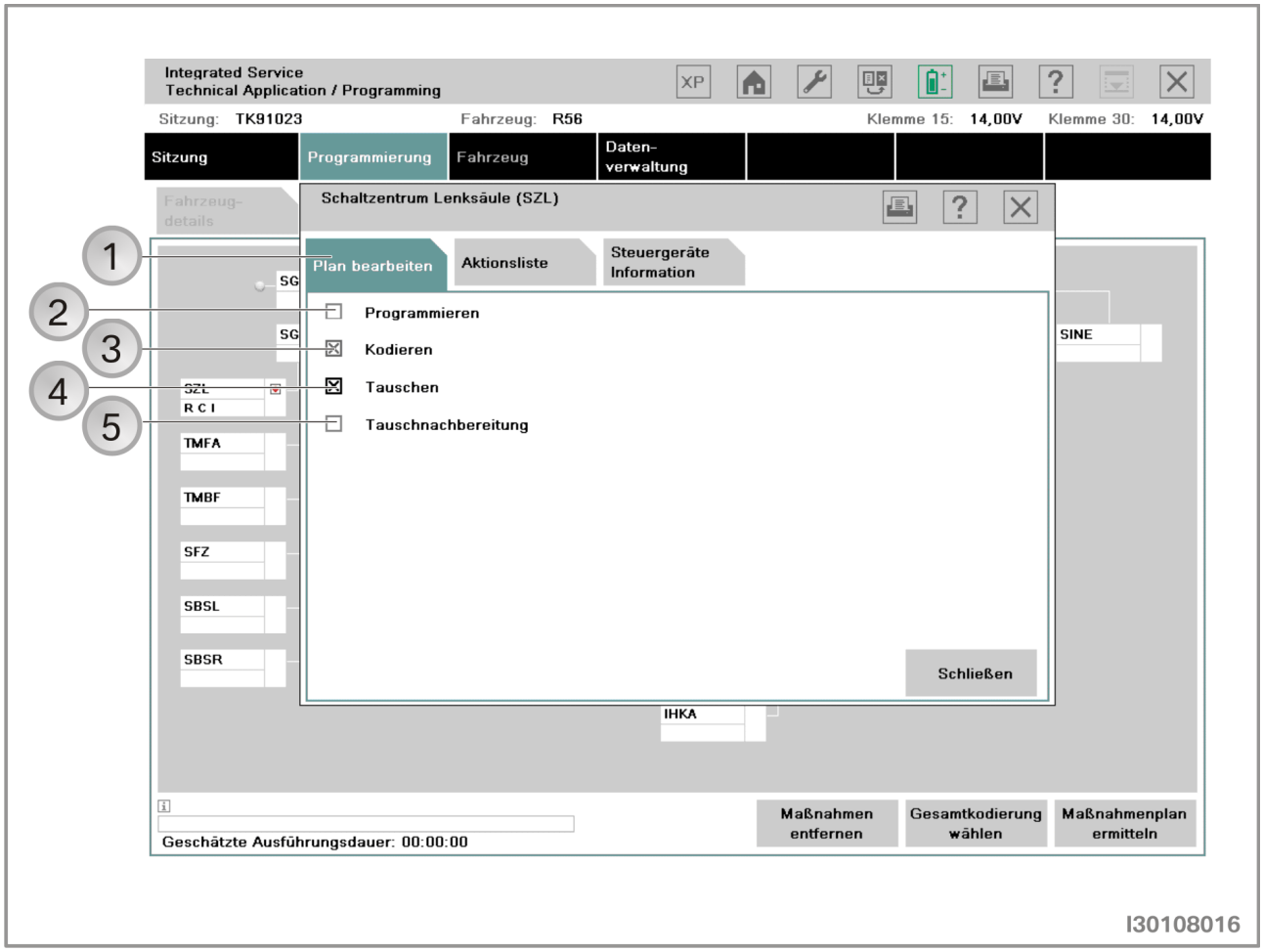
Index	Screen element	Index	Screen element
1	"Conversions" tab: The retrofits and conversions available for the vehicle are shown, see "Retrofits and conversions"	2	"CKM" tab CKM value settings, see "Vehicle and Key-Memory (CKM)"
3	"Vehicle" menu	4	"Vehicle actions" tab: • Clear fault memory • Select complete coding • Start system time of all airbag control modules.

The retrofits and conversions are listed under the "Conversions" tab in the "Vehicle" menu. All retrofits are shown first, followed by the possible conversions available for the connected vehicle.

Note:

Some retrofits and conversions require the entry of IBAC enable codes, see "Retrofits and conversions", "Procedure for IBAC Enable Codes".

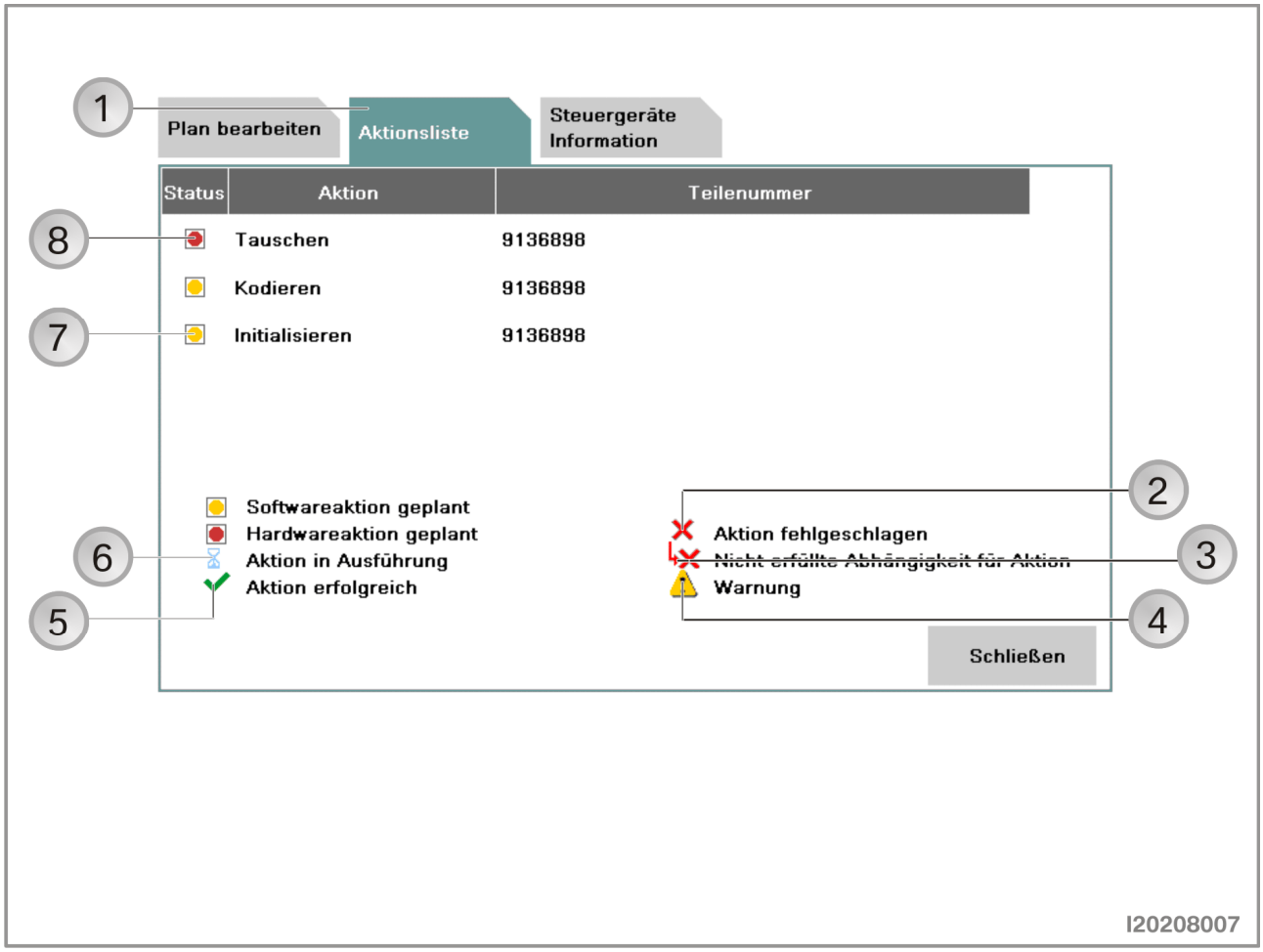
Dialogue box after clicking on the control module in "Process control module" or the control module in the "Control module tree":



Index	Screen element	Index	Screen element
1	"Edit plan" tab	2	Programming, programs control module
3	Encoding, encodes control module	4	Replace, replaces control module
5	Replacement follow-up, follow-up procedure for control module that has already been replaced		

The available actions for a control module are individual. They may differ from control module to control module depending on which actions are defined.

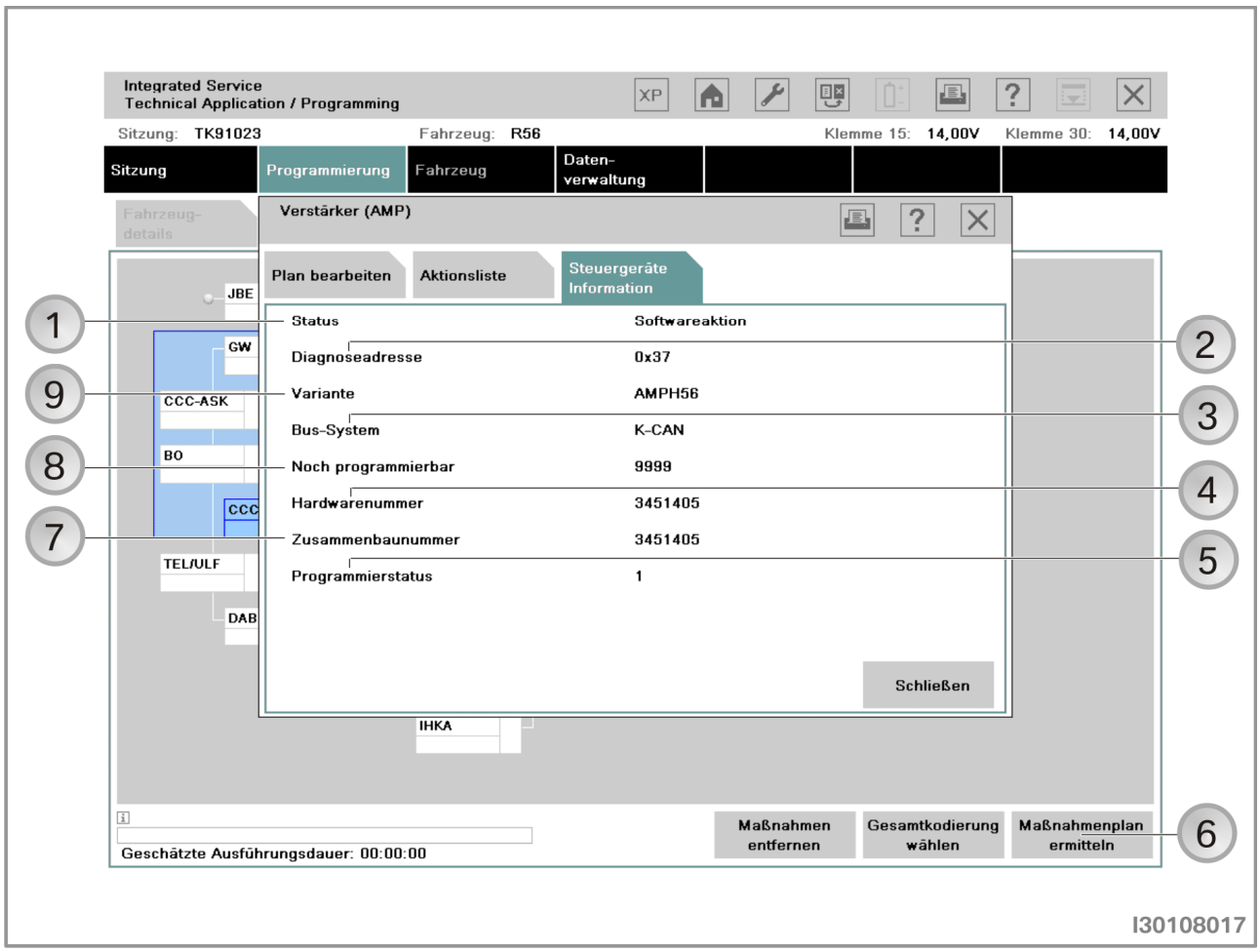
Extract from display under "Action list":



Index	Screen element	Index	Screen element
1	"Action list" tab	2	Symbol "Action failed"
3	Symbol for "Conditions for action not met" (e.g. control module was not replaced)	4	Symbol for "Warning"
5	Symbol for "Action successful"	6	Symbol for "Action in progress"
7	Symbol for "Software action planned" (e.g. encoding)	8	Symbol for "Hardware action planned" (e.g. replace control module)

The planned actions are shown together with their respective status by selecting the "Action list" tab.

Display under "Control module information":



Index	Screen element	Index	Screen element
1	Status, planned action	2	Diagnosis address of control module
3	Bus system to which the control module is connected	4	Hardware number of control module
5	Programming status, display of detailed information	6	"Determine measures plan" button
7	Assembly number, is made up of hardware number and software number of control module	8	Still programmable, shows how often the control module can still be programmed
9	Control module variant		

The information relating to the selected control module is shown by selecting the "Control module information" tab. In addition to the planned action and other relevant data, it also shows how often the control module can still be programmed.

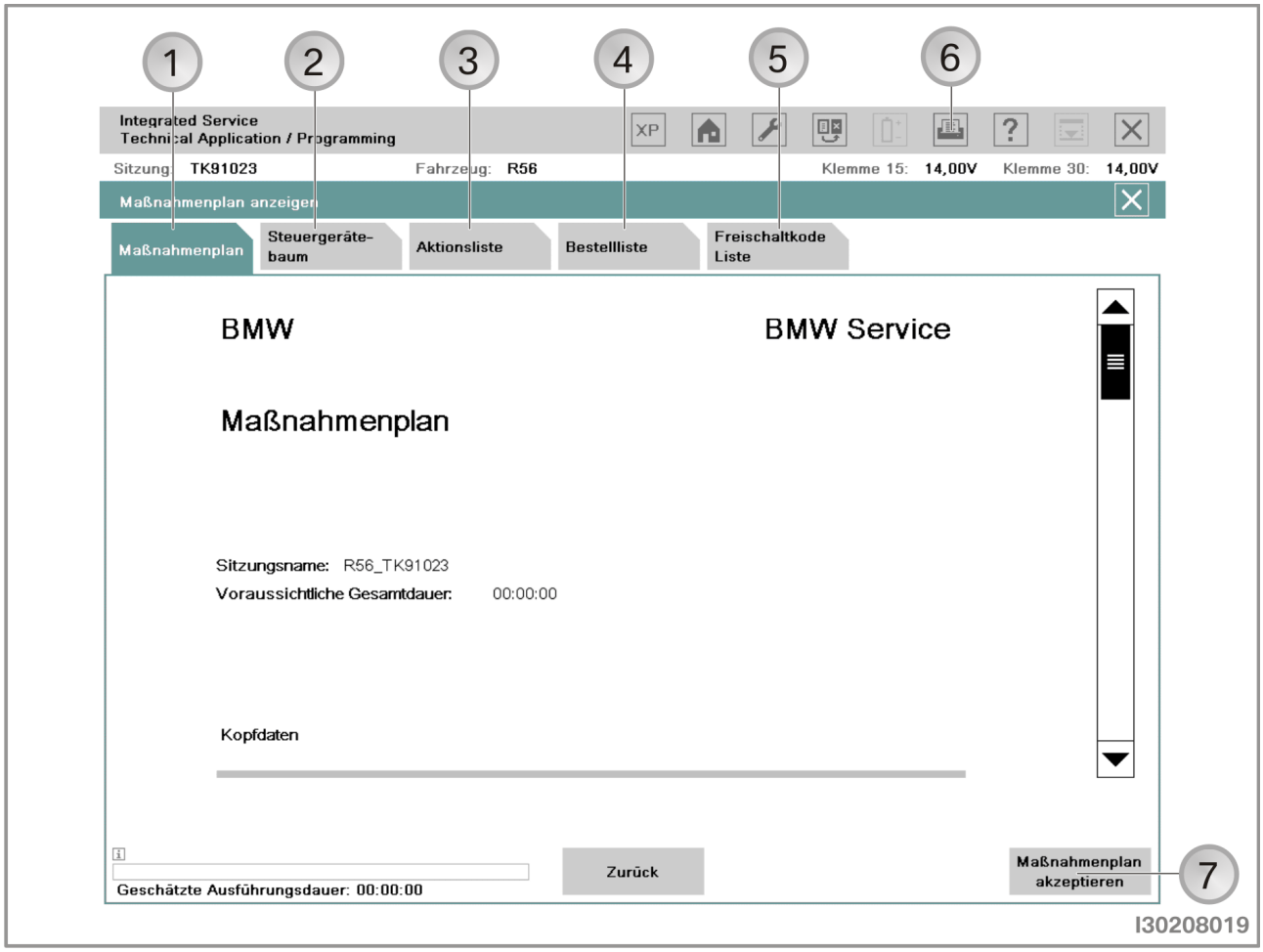
Note:

The "Determine measures plan" button is deactivated if no actions are to be selected.

Determine measures plan

User action	Result
Select "Determine measures plan".	
	The "Measures plan", "Control module tree", "Action list", "Order list" and "Enable code list" tabs are shown.
	The measures plan is shown in the menu window. Control modules that are to be processed are identified by a yellow symbol. A red symbol indicates replacement or installation of a control module. No action is planned for the control module if no symbol is shown. The actions are indicated as follows: **P** Programming **C** Encoding **I** Initializing **M** Installing **R** Replacing **U** Removing.
Select "Measures plan" tab.	
	The measures plan is shown in the print view.

Measures plan in print view:



Index	Screen element	Index	Screen element
1	"Measures plan" tab, shows measures plan in print view	2	"Control module tree" tab, shows the control module tree together with the planned actions
3	"Action list" tab, shows the planned actions in a table	4	"Order list" tab, shows control modules to be ordered
5	"Enable code list" tab, shows the enable codes used	6	"Print" button, prints the measures plan
7	"Accept measures plan" tab, executes measures plan and programs vehicle		

The measures plan contains actions that need to be carried out in order to eliminate a vehicle fault. In addition to the determined actions, it also shows the vehicle details, the session name and the ISTA/P version used.

Executing measures plan and programming vehicle

User action	Result
Print measures plan.	
Select "Accept measures plan".	
	The measures plan is shown in the menu window. Control modules that did not respond are indicated without a colored symbol. Control modules that are to be processed are identified by a yellow symbol. A red symbol indicates replacement or installation of a control module. No action is planned for the control module if no symbol is shown.
	The "Control module tree" and "Action list" tabs are shown.
Observe and acknowledge safety information on programming.	
	Measures plan is executed.
	Plan is followed up.
Carry out initialization and instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Print final report.	

Control module replacement

The control modules to be replaced are determined by the measures plan. The request to replace a control unit is integrated in the measures plan procedure. The new control modules must be encoded after installation to ensure they operate correctly.

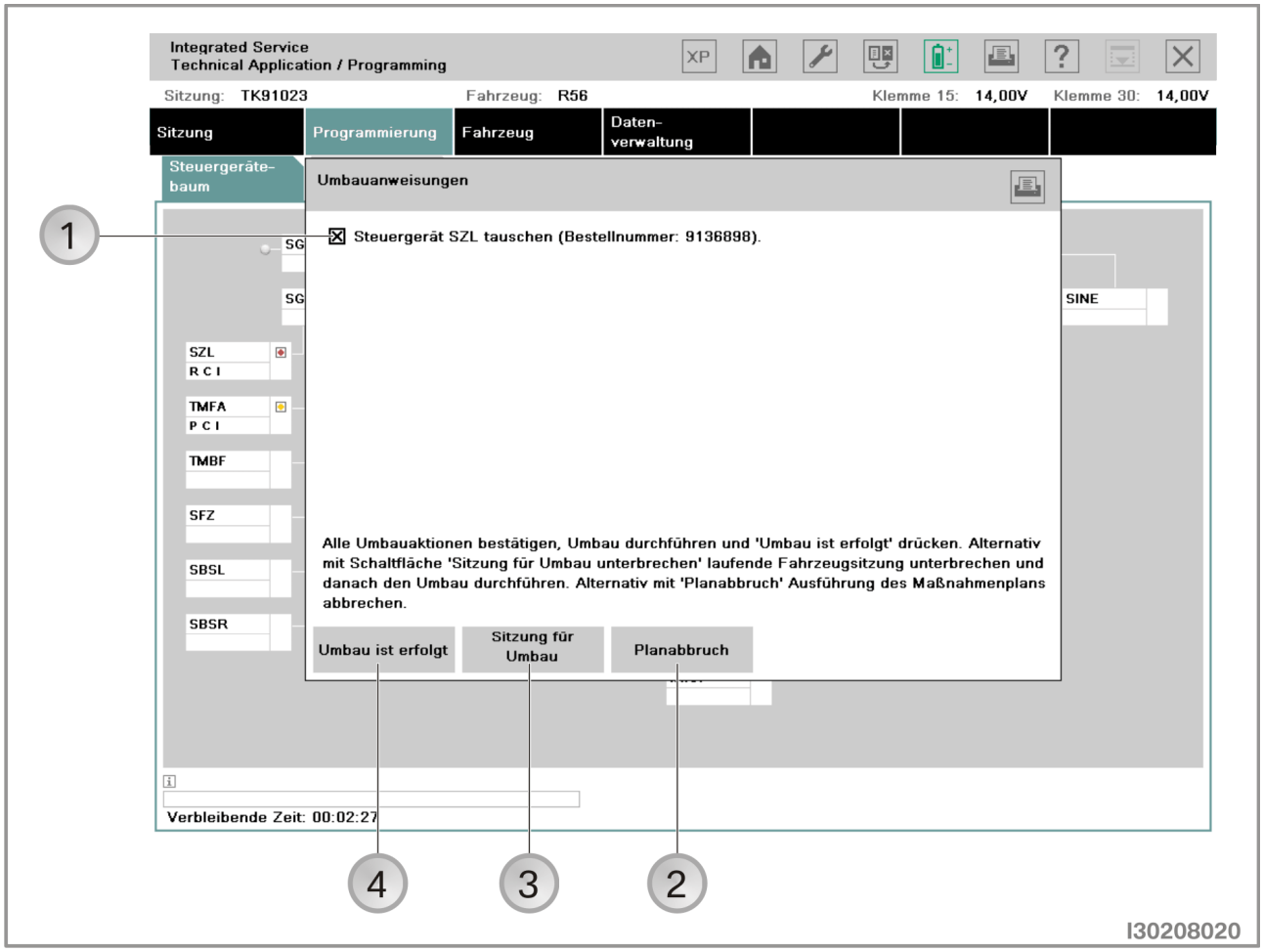
The control module replacement procedure can be carried out as follows and is described on the following pages:

- Control module replacement without interrupting the session
- Control module replacement with session for modification
- Control module replacement with plan abort.

Note:

When replacing, refer to the technical documentation for the control module.

Modification instructions for control module replacement:



Index	Screen element	Index	Screen element
1	Confirmation "Replace control module"	2	"Plan abort" button, cancels session
3	"Modification session" button, control module replacement with session for modification	4	"Modification done" button, Control module replacement without interrupting the session

Select the appropriate control module replacement.

Control module replacement without interrupting the session

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Replace or install control modules.	
Confirm replacement request.	
Click on "Modification done" button.	
	Measures plan is continued.
	Plan is followed up.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

Control module replacement with session for modification

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Click on "Session for modification" button.	
	Session is stored and ended
Replace or install control modules.	
Start new session.	
	Stored session is found.
Select stored session.	
Confirm replacement request and click on "Modification done" button.	
	The measures plan is continued, no further actions can be added.
	Plan is followed up.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

Control module replacement with plan abort

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Click on "Plan abort" button.	
	Session is terminated
Replace or install control modules.	
Start new session.	
	Dialogue box "Replaced control modules" is shown.
Answer the question "Have control modules been replaced?" with "Yes".	
	Target context is determined.
Select replaced control modules in "Control module tree" or under "Process control modules" and select "Replacement follow-up". Click on "Determine measures plan" button.	Further actions can be added.
	The measures plan is determined and executed.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

The question "Have control modules been replaced?" at the start of a new session is to be answered with "Yes". A corresponding replacement follow-up procedure is then executed as part of the measures plan.

Programming MINI navigation systems "BMW Navigation" CD

This CD contains all software versions of the "BMW Navigation" for model series R50, R52 and R53.

The navigation system on the model series R55 and R56 is not programmed with the "BMW Navigation" CD but rather exclusively using the ISTA/P programming system.

The navigation computer automatically recognizes the required version.

R50, R52 and R53 with navigation system (optional extra 609):
The current "BMW Navigation" CD must be used on vehicles with date of production after September 2001 and on all vehicles with "split-screen software":

Version 1
The navigation computer Mk3 with navigation system (optional extra 609) has operating software V17 or earlier installed. The current operating software with the retrofit package "split-screen software" (subject to charge) should be retrofitted:

- Read out software status.
- Pay attention to installation instructions provided in the cover of the operating software CD.
- Insert current navigation system operating software CD.
- The installation will start automatically.
- The CD is ejected when the installation is complete. The installation can take up to 7 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 "Load V17 or the Key CD" appears in the display of the on-board monitor.
- Insert the Key CD.
- The Key CD is ejected when the installation is complete. The installation can take about 2 minutes.
- Remove the Key CD.
- The navigation computer is then automatically restarted.

Version 2
The navigation computer Mk3 in a vehicle with navigation system (optional extra 609) should be replaced in the event of a complaint. A new navigation computer Mk3 with the current operating software should be installed:

- Read out software status.
- Install new navigation computer in vehicle. See Electronic Parts Catalogue (EPC).
- Pay attention to installation instructions provided in the cover of the operating software CD.
- Insert current navigation system operating software CD.
- The installation will start automatically.
- The CD is ejected when the installation is complete. The installation can take up to 7 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 navigation computer (please refer to BMW ISTA workshop systems).
- The navigation computer must go into sleep mode. To do this, switch the ignition off. The "Power LED" on the navigation computer will go out after one minute.

The CD "BMW Navigation V17.1" must be used for vehicles with date of production before September 2001 and Mk3 navigation computer without "split-screen software".

Procedure for all model series

Note:
The basic requirement for efficient programming is that the vehicle is correctly prepared. When programming and encoding the navigation system, refer to the documentation "Preparing Vehicle Programming and Finishing Off".

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.	

Important!

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 programming, the screen of the Control Display, on-board monitor or Central Information Display may flicker.

Note:

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

MINI Retrofitting and conversions

R55 and R56
Retrofits and conversions are carried out after programming as part of a measures plan.

R50, R52 and R53
Individual retrofits for the model series will only be offered by ISTA/P if they are actually possible. This prevents incorrect programming of control modules. If the retrofit is not offered by ISTA/P by mistake, please consult Technical Parts Support via the ASAP Portal.

Note:

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

Only the items specified in the Electronic Parts Catalogue (Group EPC) are approved for retrofitting.
Explanatory notes about individual retrofits and conversions available in ISTA/P will be supplied by Technical Support as part of the fault elimination measures.

Procedure for retrofitting or conversion of systems requiring programming or encoding:

Read out vehicle data with ISTA/P and determine measures plan.
See Section: Start new session with ISTA/P.

- Select "Vehicle" tab
- Select "Conversions"
- Select retrofit or modification system (e.g. "PDC")
- After selecting all retrofits or conversions, select "Determine measures plan"
- The selected retrofits or conversions are itemized in the action list.

Procedure for conversions designed as fault elimination
Conversion with the explanation "fault elimination" may only be performed if you have been prompted to do so by one (or more) of the following sources:

- Test modules in ISTA workshop information system
- Service information bulletins
- FAQ domain in ASAP
- PuMA actions
- Repair instructions
- Technical campaigns.

Locations of OBD and MOST, connection options of MINI model series

The following overview shows which vehicle interfaces are approved for vehicle programming on which model series:

Model series	Vehicle interface (connection via OBD socket)		MOST compatibility (multichannel programming)
	ICOM A and C	ICOM A	ICOM A and B (Only possible if MOST direct access port fitted)
R55, R56	-	X	X
R50, R52, R53	X	X	-

Use of ICOM
All MINI model series can be processed with the ICOM A, B and C modules.
For illustrations and information on the ICOM interfaces, see ICOM (Integrated Communication Optical Module)

Installation location for OBD socket
R55 and R56
The OBD socket is located near the A-pillar in the driver's footwell.
R50, R52 and R53
The OBD socket is located on the A-pillar in the driver's footwell.

Installation location of the MOST direct access port
R55 and R56
The MOST direct access port is located in the front-passenger footwell, behind the A-pillar trim.

Important!
The MOST direct access port can only be pulled out by approx. 2 to 3 cm. Otherwise, there is a risk of damaging the two fibre-optic cables.

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

Note:
On the R55 and R56 there is only a MOST direct access port if one of the following is installed:

- Professional radio (RAD2)
- Car Communication Computer (CCC) = Professional navigation system

On vehicles built after 03/07 with RAD2 installed, a MOST direct access port is provided only if another MOST control module, for example CDC, is installed. No MOST direct access port is provided on vehicles built after 06/08 with RAD2 and CDC preparation.

Note:

Check that the MOST direct access port is correctly installed following any repair work in the driver's footwell (e.g. control module replacement).

Note:

After use, seal the MOST direct access port again with the bridge.

Programming procedure Rolls-Royce

The following pages contain descriptions of the programming procedure for the Rolls-Royce model series.

Note:

The basic requirement for efficient programming is that the vehicle is correctly prepared. Please refer to the description "Vehicle programming and finishing off".

Read out vehicle data with ISTA/P.
See Section: Start new session with ISTA/P.

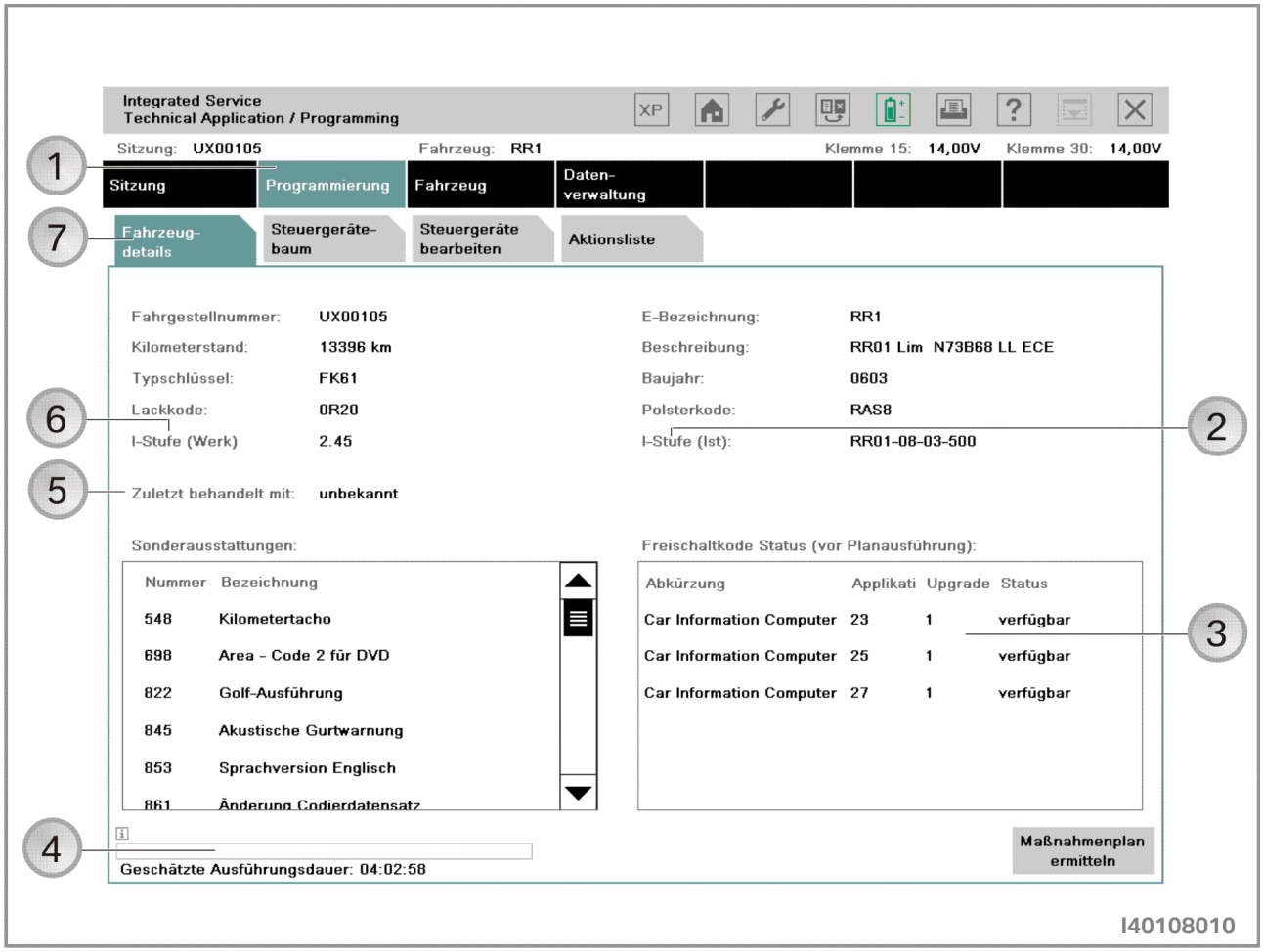
The measures plan can be expanded by the following actions:

- Carry out conversion
- Carry out vehicle actions
- Set CKM values
  - Select "Vehicle" tab.
  - Select "CKM" tab.
  - Print CKM values.
- Prepare for control module replacement
- Programs control module
- Encode control module.

The actions can be selected as follows:

- Under the "Process control modules" tab by directly selecting the actions or clicking on the control module
- Under the "Control module tree" tab by clicking on the control module.

Connection to vehicle is set up automatically:



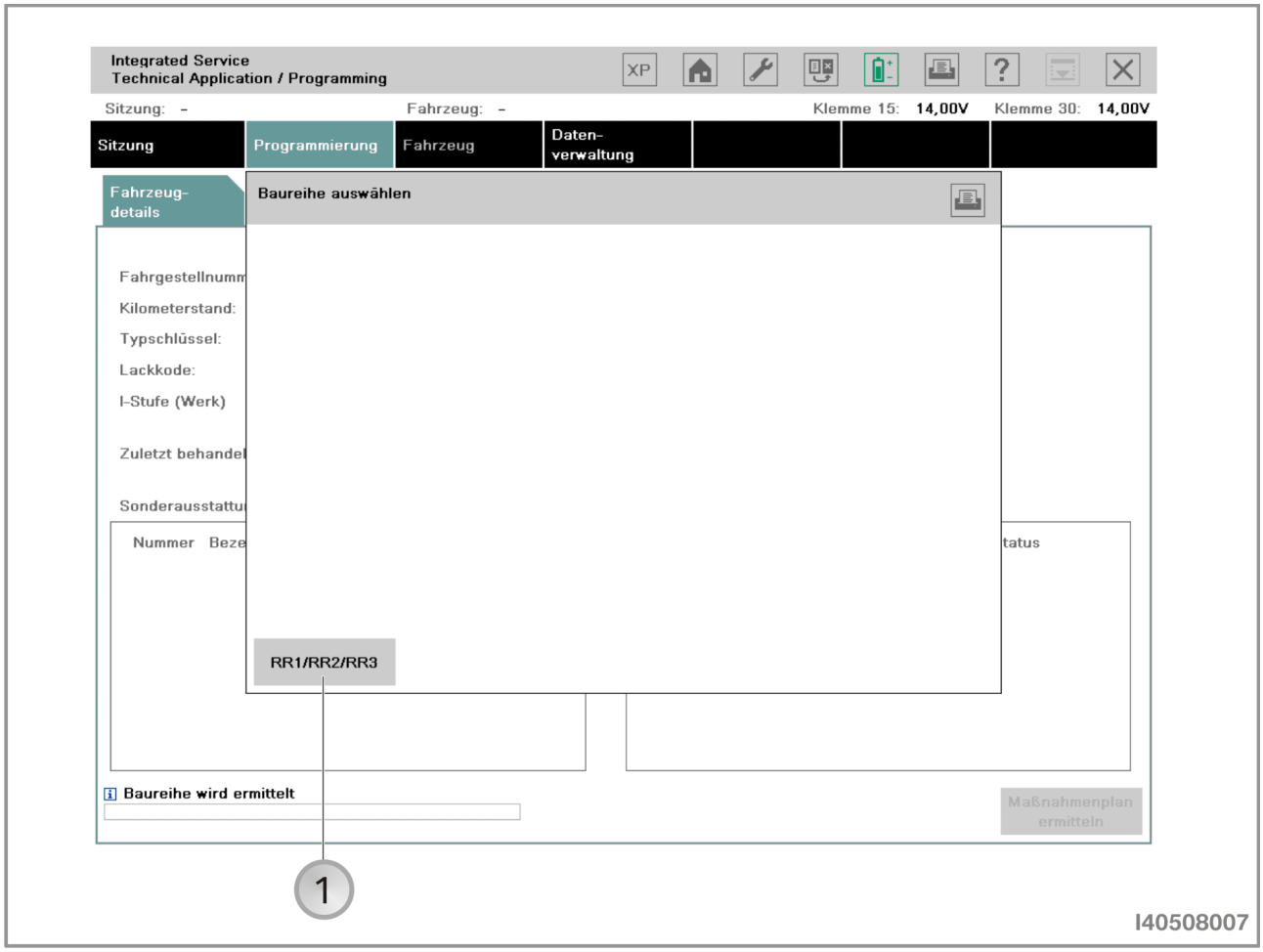
Index	Screen element	Index	Screen element
1	"Programming" menu	2	I-stage (actual), shows current I-stage of vehicle
3	Enable code status, status of enable code used or required in vehicle	4	Progress bar, shows processing progress
5	Last processed with, shows the Progman or ISTA/P version, with which the vehicle was last processed	6	I-stage (factory), shows the I-stage with which the vehicle was produced
7	"Vehicle details" tab		

Follow and confirm the instructions provided by the programming system.

By reading out the vehicle details it is possible to determine whether the vehicle corresponds to the current software status. Unnecessary vehicle programming can be avoided in this way.

The native measures plan is determined after the connection to the vehicle has been set up successfully. This is shown under the "Programming" menu button.

Selecting vehicle manually:

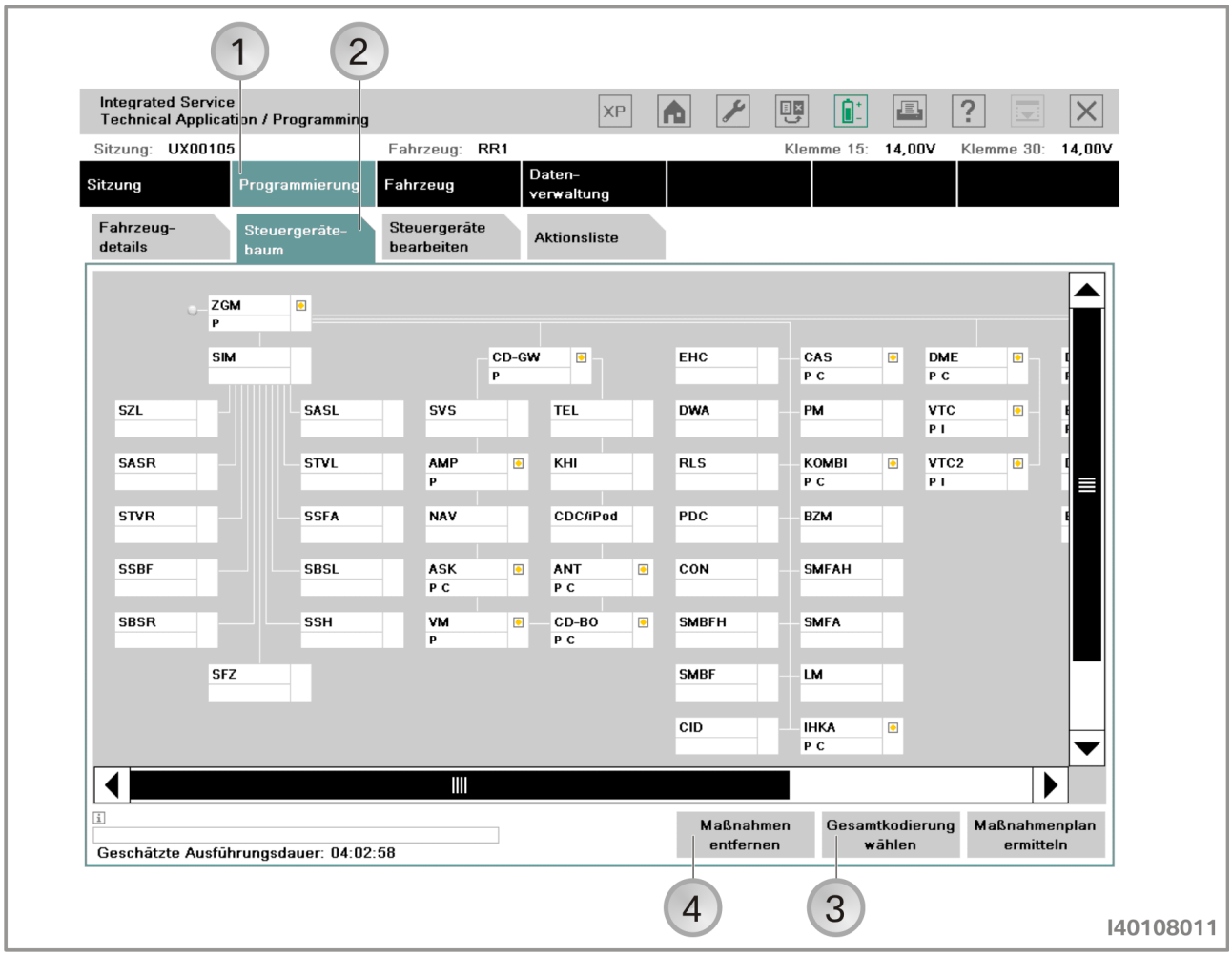


Index	Screen element
1	"Model series" button, model series selection

Select the model series for the connected vehicle by clicking the corresponding button.

Control module tree:

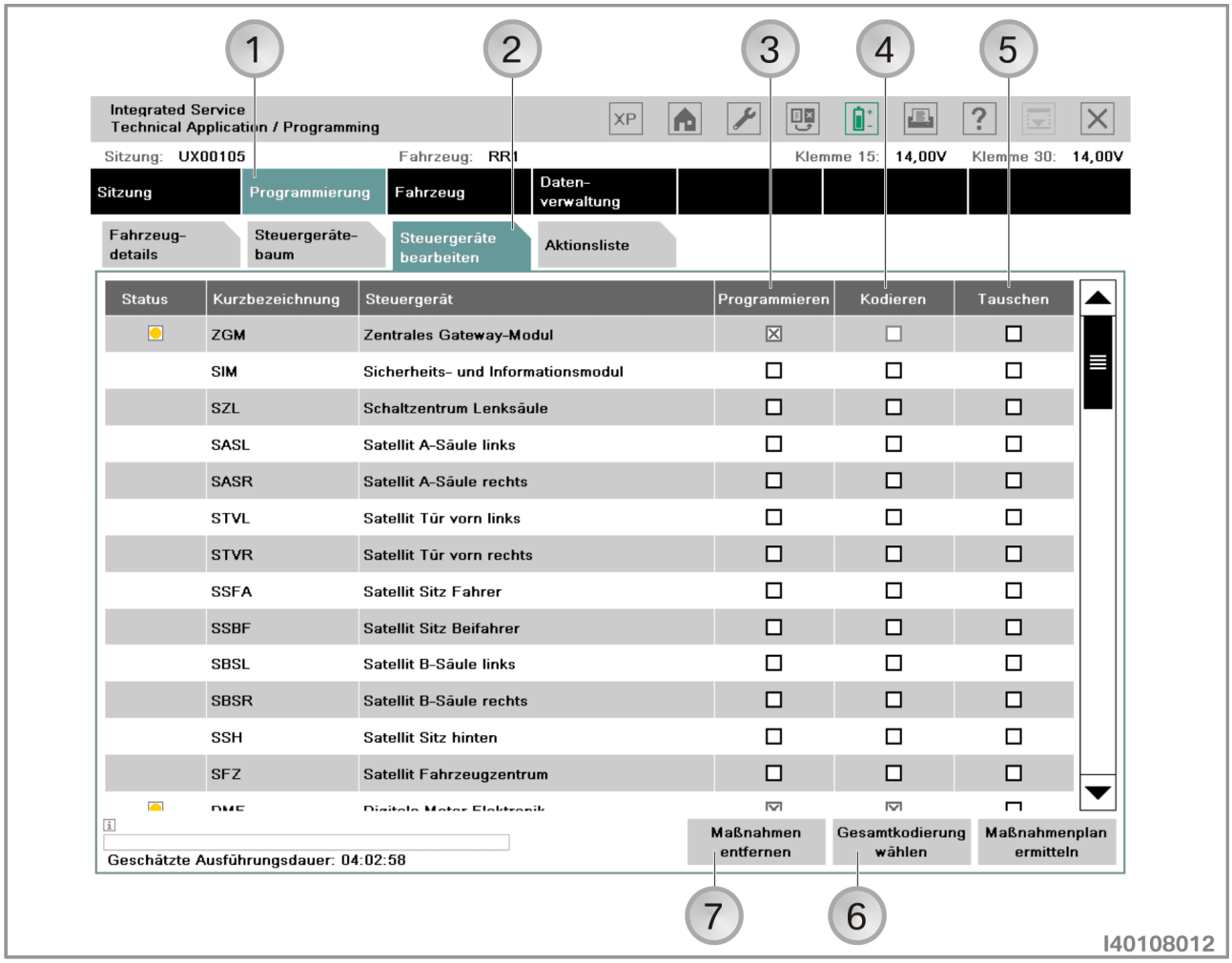
The control module tree shows the control units fitted in the vehicle corresponding to the topology. Each control module is shown as linked to the corresponding bus. Compound control modules are shown within a light blue area.



Index	Screen element	Index	Screen element
1	"Programming" menu	2	"Control module tree" tab, graphic representation of the control module tree
3	"Select complete coding" button, selects complete coding of the vehicle	4	"Remove actions" button

All actions determined based on the context are removed by clicking on the "Remove actions" button. Control module actions relevant to I-stages cannot be selected manually.

Display under "Process control module":



Index	Screen element	Index	Screen element
1	"Programming" button	2	"Process control modules" tab
3	Programming	4	Encoding
5	Replacement	6	"Select complete coding" button, selects complete coding of the vehicle
7	"Remove actions" button		

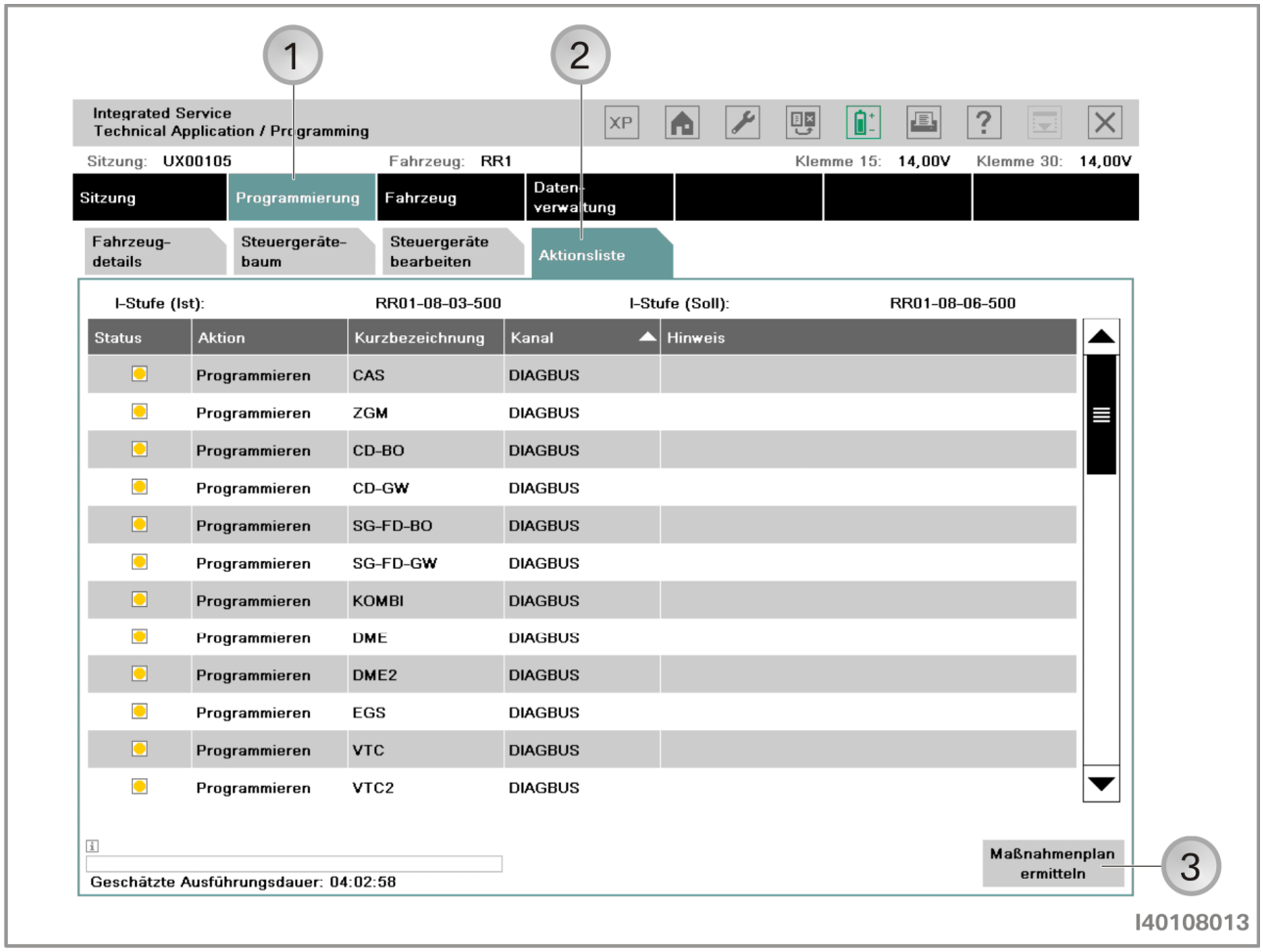
The actions ("Programming", "Encoding" or "Replacing") available for the control modules can be selected directly.

Note:

The "Determine measures plan" button is deactivated if determining the target context results in no action.

All actions determined based on the context are removed by clicking on the "Remove actions" button. Control module actions relevant to I-stages cannot be selected manually.

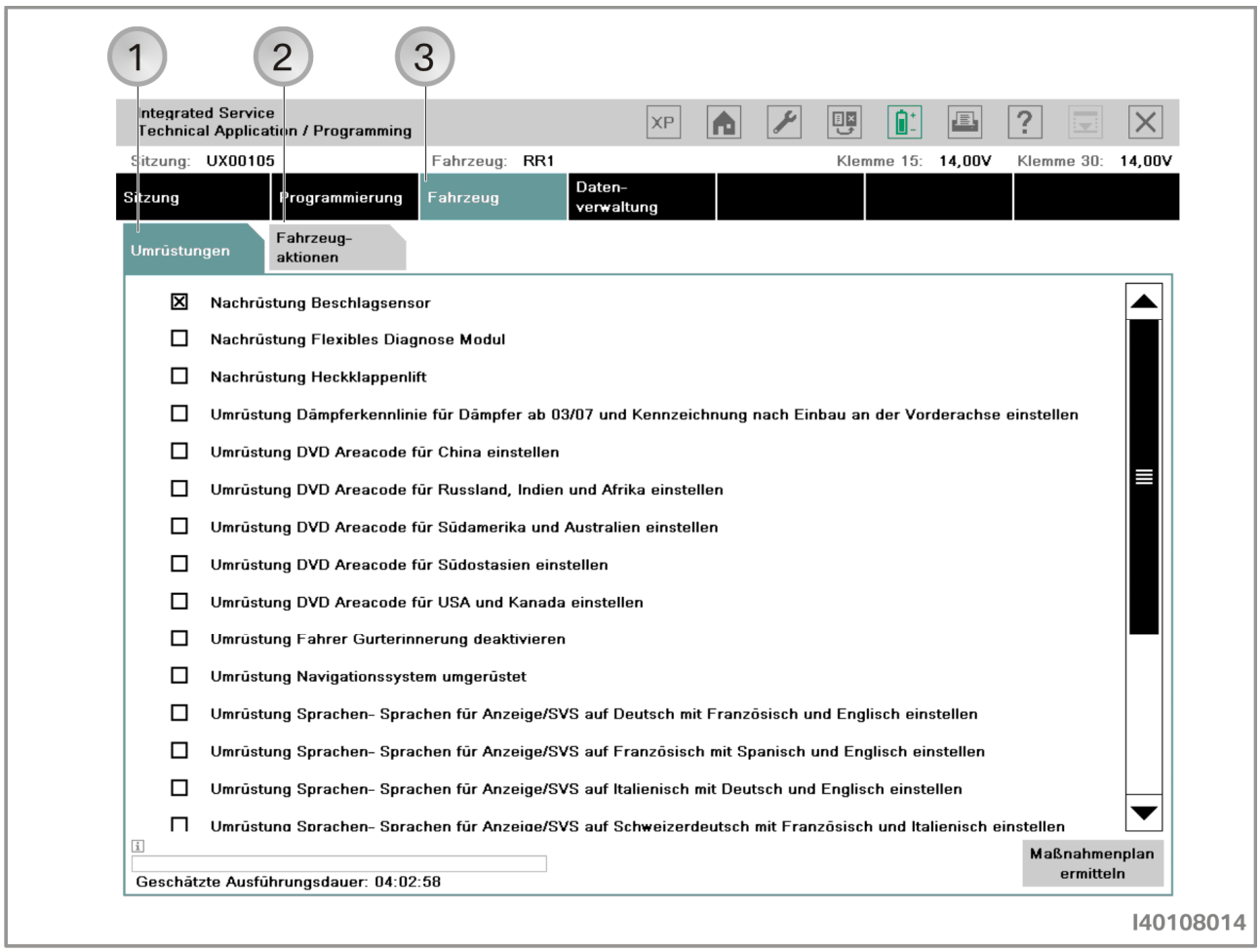
Action list:



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

The "Action list" is a summary of the planned actions. They are also shown in the "Measures plan". Information relating to the control module may also be shown (e.g. control module can no longer be programmed).

Vehicle menu:



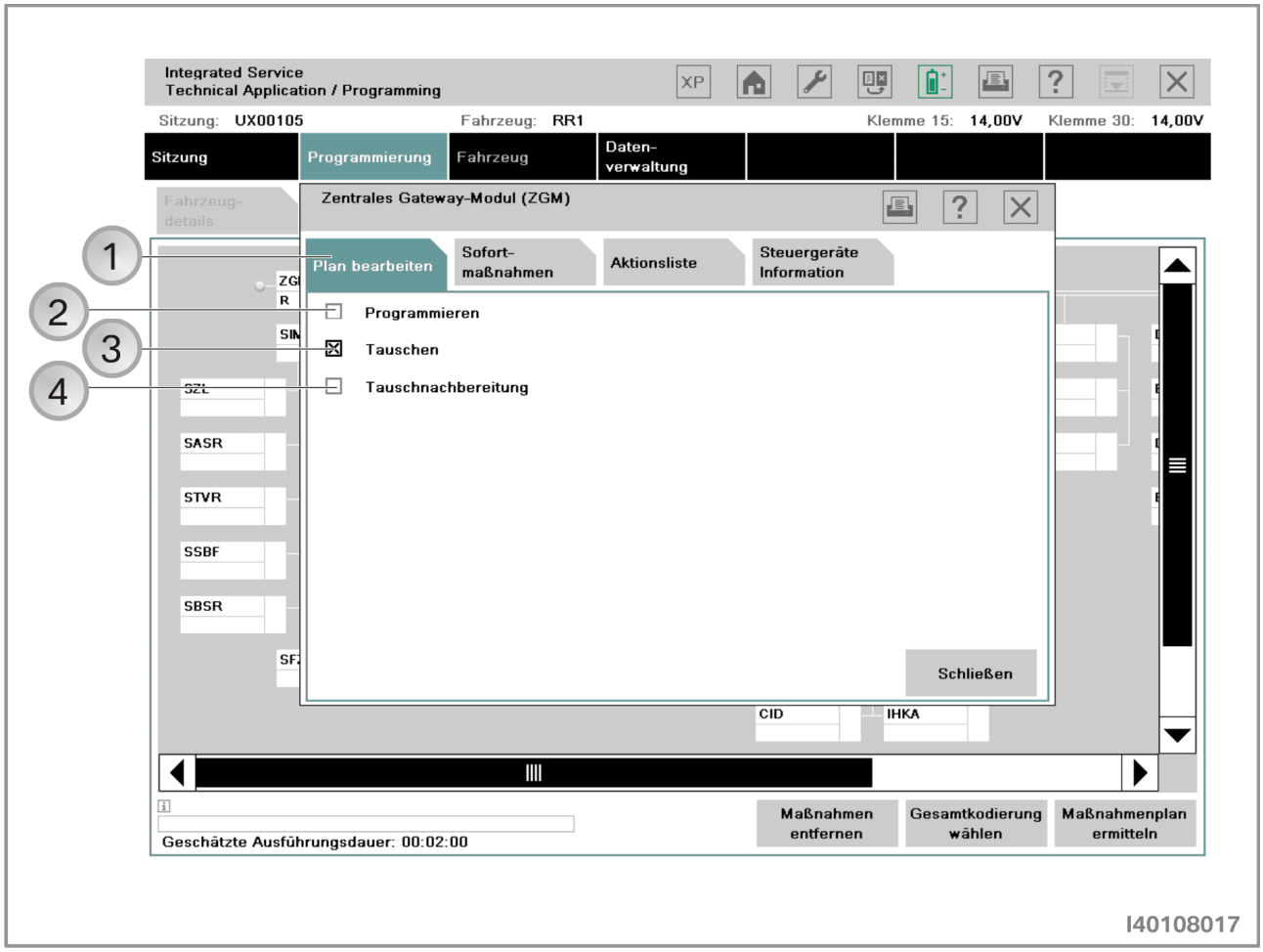
Index	Screen element	Index	Screen element
1	"Conversions" tab: The retrofits and conversions available for the vehicle are shown, see "Retrofits and conversions"	2	"Vehicle actions" tab: • Clear fault memory • Select complete coding • Start system time of all airbag control modules.
3	"Vehicle" menu		

The retrofits and conversions are listed under the "Conversions" tab in the "Vehicle" menu. All retrofits are shown first, followed by the possible conversions available for the connected vehicle.

Note:

Some retrofits and conversions require the entry of IBAC enable codes, see "Retrofits and conversions", "Procedure for IBAC Enable Codes".

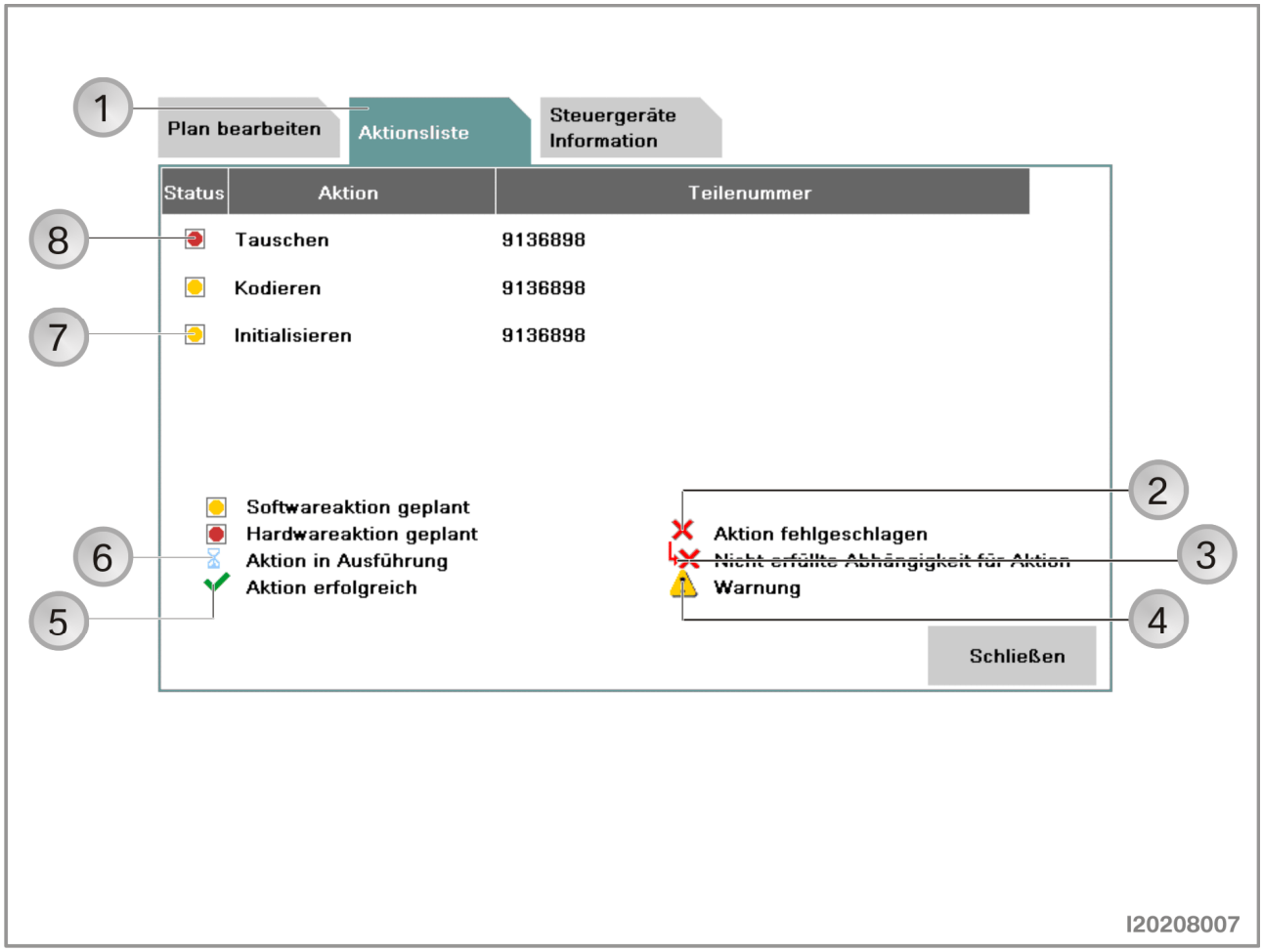
Dialogue box after clicking on the control module in "Process control module" or the control unit in the "Control module tree":



Index	Screen element	Index	Screen element
1	"Edit plan" tab	2	Programming, programs control module
3	Replace, replaces control module	4	Replacement follow-up, follow-up procedure for control module that has already been replaced

The available actions for a control module are individual. They may differ from control module to control module depending on which actions are defined.

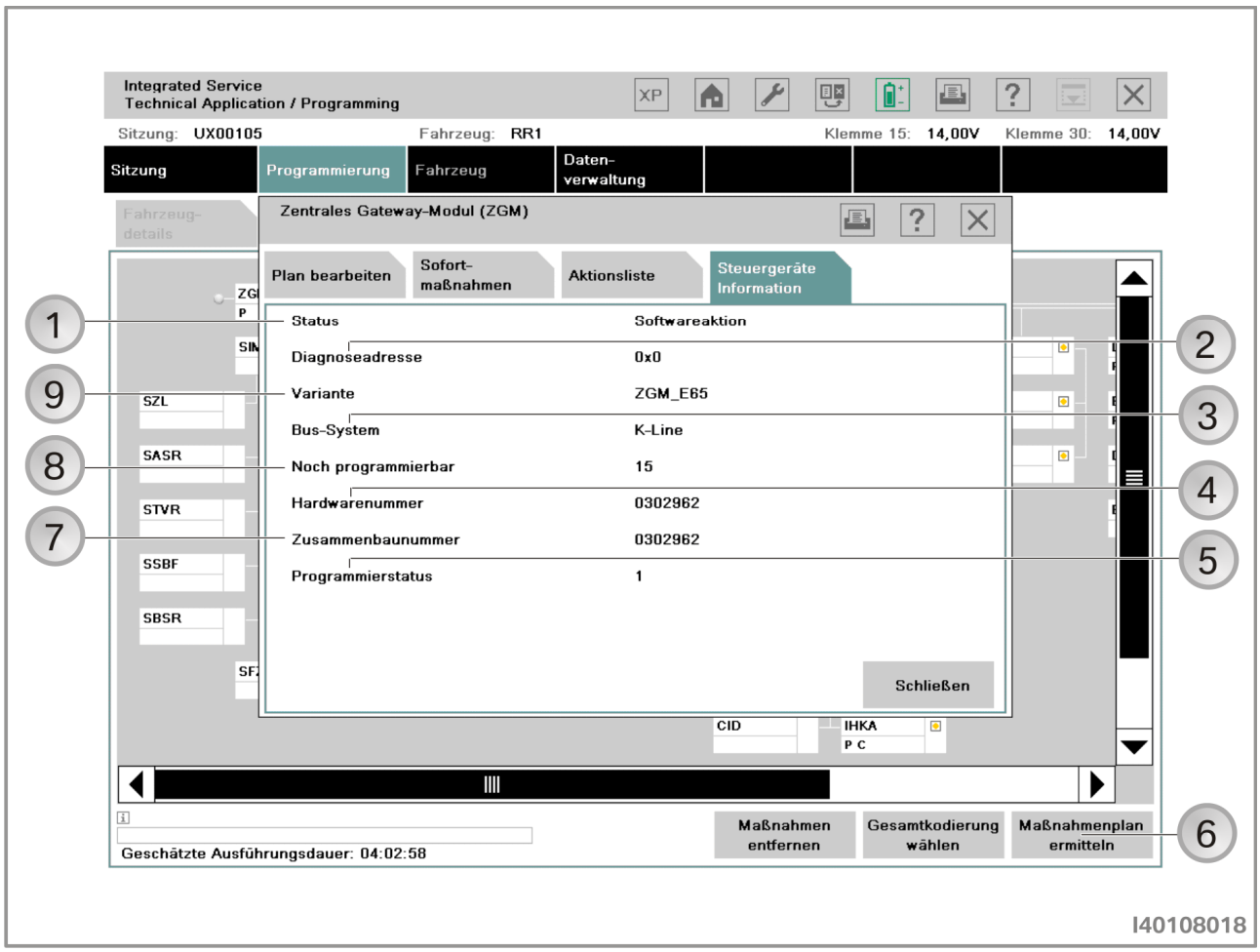
Extract from display under "Action list":



Index	Screen element	Index	Screen element
1	"Action list" tab	2	Symbol "Action failed"
3	Symbol for "Conditions for action not met" (e.g. control module was not replaced)	4	Symbol for "Warning"
5	Symbol for "Action successful"	6	Symbol for "Action in progress"
7	Symbol for "Software action planned" (e.g. encoding)	8	Symbol for "Hardware action planned" (e.g. replace control module)

The planned actions are shown together with their respective status by selecting the "Action list" tab.

Display under "Control module information":



Index	Screen element	Index	Screen element
1	Status, planned action	2	Diagnosis address of control module
3	Bus system to which the control module is connected	4	Hardware number of control module
5	Programming status, display of detailed information	6	"Determine measures plan" button
7	Assembly number, is made up of hardware number and software number of control module	8	Still programmable, shows how often the control module can still be programmed
9	Control module variant		

The information relating to the selected control module is shown by selecting the "Control module information" tab. In addition to the planned action and other relevant data, it also shows how often the control module can still be programmed.

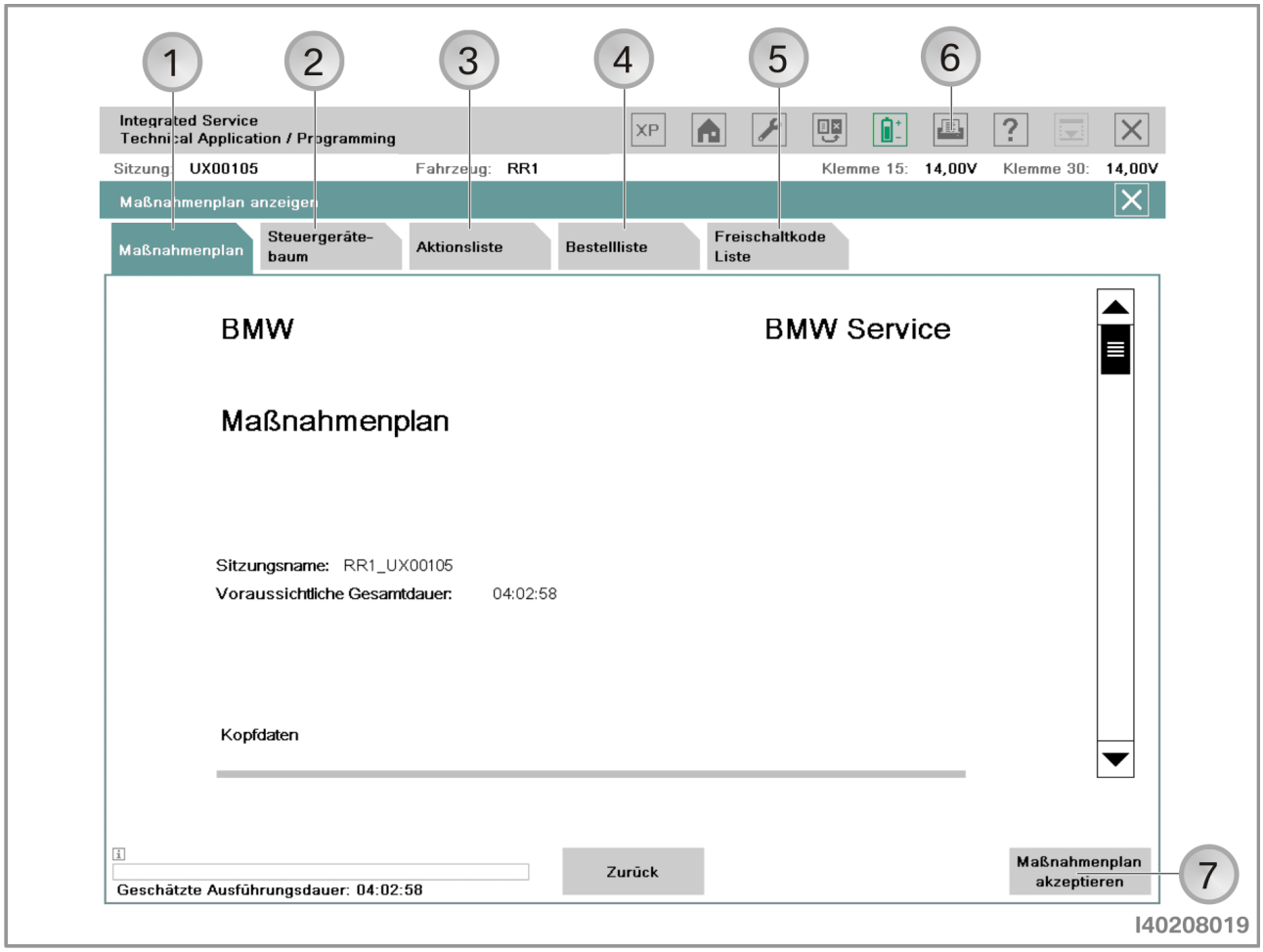
Note:

The "Determine measures plan" button is deactivated if no actions are to be selected.

Determine measures plan

User action	Result
Select "Determine measures plan".	
	The "Measures plan", "Control module tree", "Action list", "Order list" and "Enable code list" tabs are shown.
	The measures plan is shown in the menu window. Control modules that are to be processed are identified by a yellow symbol. A red symbol indicates replacement or installation of a control module. No action is planned for the control module if no symbol is shown. The actions are indicated as follows: **P** Programming **C** Encoding **I** Initializing **M** Installing **R** Replacing **U** Removing.
Select "Measures plan" tab.	
	The measures plan is shown in the print view.

Measures plan in print view:



Index	Screen element	Index	Screen element
1	"Measures plan" tab, shows measures plan in print view	2	"Control module tree" tab, shows the control module tree together with the planned actions
3	"Action list" tab, shows the planned actions in a table	4	"Order list" tab, shows control modules to be ordered
5	"Enable code list" tab, shows the enable codes used	6	"Print" button, prints the measures plan
7	"Accept measures plan" tab, executes measures plan and programs vehicle		

The measures plan contains actions that need to be carried out in order to eliminate a vehicle fault. In addition to the determined actions, it also shows the vehicle details, the session name and the ISTA/P version used.

Executing measures plan and programming vehicle

User action	Result
Print measures plan.	
Select "Accept measures plan".	
	The measures plan is shown in the menu window. Control modules that did not respond are indicated without a colored symbol. Control modules that are to be processed are identified by a yellow symbol. A red symbol indicates replacement or installation of a control module. No action is planned for the control module if no symbol is shown.
	The "Control module tree" and "Action list" tabs are shown.
Observe and acknowledge safety information on programming.	
	Measures plan is executed.
	Plan is followed up.
Carry out initialization and instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Print final report.	

Control module replacement

The control modules to be replaced are determined by the measures plan. The request to replace a control unit is integrated in the measures plan procedure. The new control modules must be encoded after installation to ensure they operate correctly.

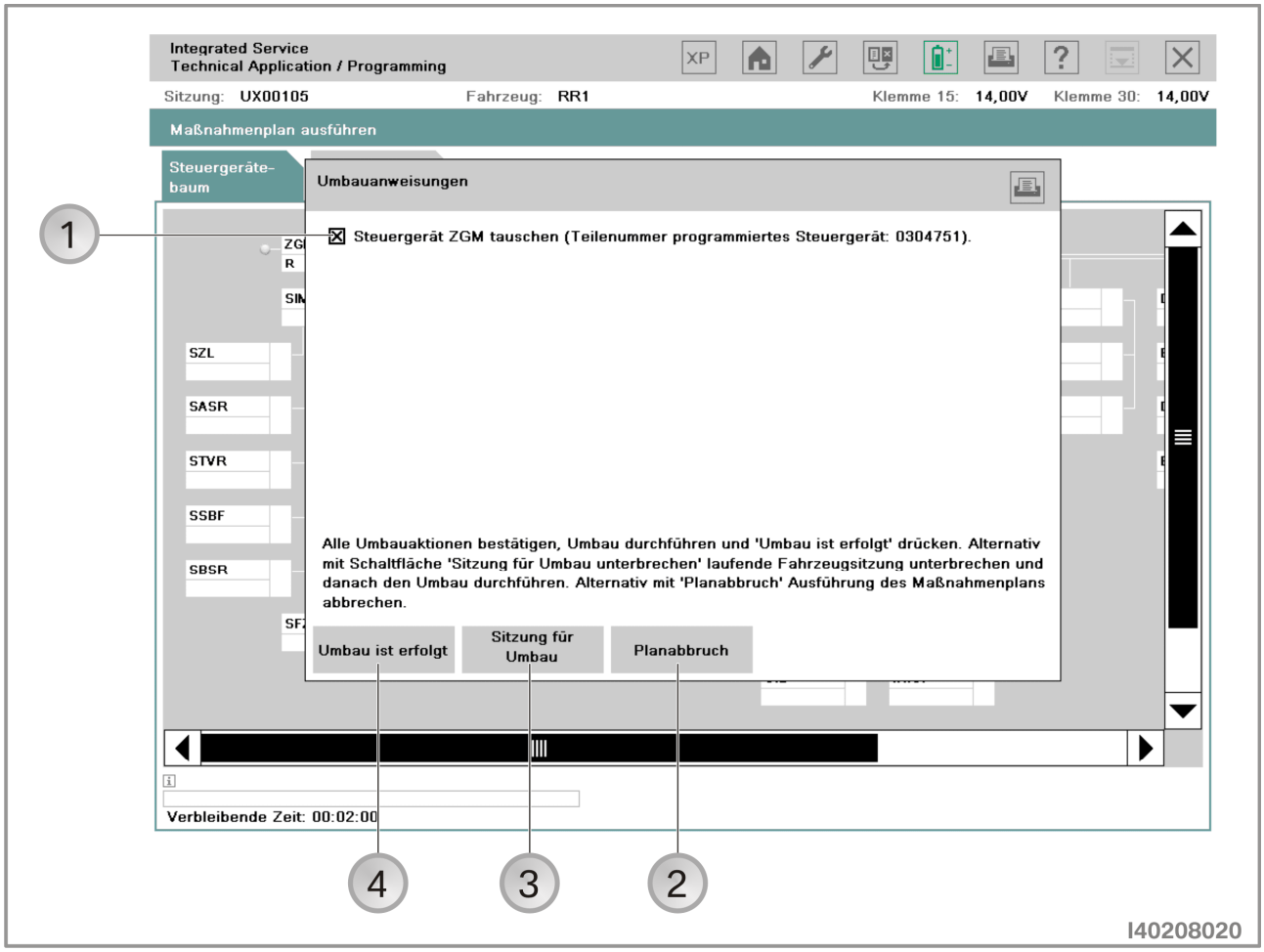
The control module replacement procedure can be carried out as follows and is described on the following pages:

- Control module replacement without interrupting the session
- Control module replacement with session for modification
- Control module replacement with plan abort.

Note:

When replacing, refer to the technical documentation for the control module.

Modification instructions for control module replacement:



Index	Screen element	Index	Screen element
1	Confirmation "Replace control module"	2	"Plan abort" button, cancels session
3	"Modification session" button, control module replacement with session for modification	4	"Modification done" button, control module replacement without interrupting the session

Select the appropriate control module replacement.

Control module replacement without interrupting the session

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Replace or install control modules.	
Confirm replacement request.	
Click on "Modification done" button.	
	Measures plan is continued.
	Plan is followed up.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

Control module replacement with session for modification

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Click on "Session for modification" button.	
	Session is stored and ended
Replace or install control modules.	
Start new session.	
	Stored session is found.
Select stored session.	
Confirm replacement request and click on "Modification done" button.	
	The measures plan is continued, no further actions can be added.
	Plan is followed up.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

Control module replacement with plan abort

User action	Result
	Measures plan is executed. If control modules are to be replaced as part of the measures plan, a corresponding request to replace the control module will be issued.
Click on "Plan abort" button.	
	Session is terminated
Replace or install control modules.	
Start new session.	
	Dialogue box "Replaced control modules" is shown.
Answer the question "Have control modules been replaced?" with "Yes".	
	Target context is determined.
Select replaced control units in "Control module tree" or under "Process control modules" and select "Replacement follow-up". Click on "Determine measures plan" button.	Further actions can be added.
	The measures plan is determined and executed.
Carry out instructions of plan follow-up procedure and confirm.	
	At the end of the measures plan the "Final report" tab shows the final report.
Select "Final report" tab.	
Print final report.	

The question "Have control modules been replaced?" at the start of a new session is to be answered with "Yes". A corresponding replacement follow-up procedure is then executed as part of the measures plan.

Glossary

Description	Description
Bus system	The bus systems enable networking of the individual control modules in the vehicle via serial interfaces. The following bus systems are used in BMW vehicles: • BSD (bit-serial data interface) • byteflight • CAN-Bus (Controller Area Network-Bus) • D-CAN (Diagnosis-on-CAN) • Ethernet (wired data network technology for local data networks and vehicle access) • F-CAN (chassis CAN) • FlexRay • K-bus (also referred to as I-bus in earlier models) • K-bus protocol • K-CAN (body CAN) • K-CAN2 (body CAN 2) • LIN-bus (Local Interconnect Network bus) • Local-CAN • MOST-bus (Media-Oriented System Transport bus) • PT-CAN (Powertrain-CAN) • PT-CAN (Powertrain-CAN 2) • USB (Universal Serial Bus).
CBS data	Condition-Based Service. The CBS data are updated in the vehicle key as part of a driving cycle. The CBS data can be additionally updated in the vehicle key by means of a concealed service function.
Vehicle and Key Memory	Performs certain customer-specific settings in the vehicle: • Vehicle Memory settings relate to all users of a vehicle • Key Memory settings are user-specific and relate to a specific key
Diagnosis address	Control module address for diagnosis
EWS/DME or EWS/DDE calibration	Calibration between EWS and DME/DDE control module, control modules are synchronized
Vehicle order/central encoding key	Refers to the file that contains various vehicle data (data status, optional extras, etc.)

Description	Description
Flash-programming	See programming
Complete encoding	Matches and synchronizes functions. This may be necessary if functions in the vehicle are not working or working correctly after programming/encoding
IBAC enable code	Code for enabling modifications and retrofits
ICOM	Integrated Communication Optical Module Interface between BMW workshop network and vehicle
ISID	Integrated Service Information Display Device description handbook
ISIS	Integrated Service Information Server The new workshop system is known as ISTA. This application is installed together with ISPA on the ISIS.
ISPA	Integrated Service Processes Application Software for Service consultation
ISSS	Integrated Software Service Station Installing the Basic DVD of the ISTA/P starter kit converts the SSS into an ISSS
ISTA	Integrated Service Technical Application Workshop system
ISTA/P	Integrated Service Application/Programming Successor to Progman programming system. ISTA/P contains up-to-date specific vehicle programming as well as new functions, thus making the system well equipped to effectively meet future vehicle programming requirements in service applications
I-stage	In vehicle development, production periods are identified by integration stages (I-stages)
JETstream	Online update: Updates application software by loading new software packages
Encoding	Adapts the control modules to the vehicle in which they are installed: Functions and maps are enabled or activated, depending on national version, equipment fitted and type of vehicle
Mecca indicator	The "Mecca indicator" is an arrow on the navigation system that permanently points towards the geographic location of the city of Mecca.
MOST	Media-Oriented System Transport Fibre optics cable. The MOST-bus transmits communication and information data in the vehicle

Description	Description
Retrofit	Refers to subsequent system installation (e.g. telephone); new system is adapted to the overall system network of the vehicle
Personal Profile	This is the new designation for Vehicle and Key Memory on certain vehicles; settings are made directly in the vehicle while the more complex settings (e.g. tilt sensor ON/OFF) are still performed in ISTA/P under the Conversion menu.
Programming	Loads a new program to the control module; also known as "flash programming"
Programming status	Shows the control module status as a number
SGC	Control module coding
Target context	Software status of the vehicle that is assigned by the programming system
Software ID	Software identification
SWT	Sweeping Technology The enable code enables more functions in the vehicle. It is based on Sweeping Technologies. The enable code is a cryptological code in the control module.
Replacement follow-up	Finishing off procedure after replacing a control module
Conversion	Changes individual functions in a control module (e.g. language); the vehicle must assume sleep mode for a conversion to take effect
USB	Universal Serial Bus
WSM	Workshop System Management Administration system for ISIS, executes all administrative tasks.
Assembly number	The assembly number is made up of the hardware number and the software number