Technical Service Bulletin

Audi

00 Software Version Management (SVM), operating instructions

00 12 32 2011732/9 February 7, 2012. Supersedes Technical Service Bulletin Group 00 number 10 – 02 dated March 24, 2010 for reasons listed below.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
All Audi	2002 on	Not Applicable	Not Applicable

Condition

REVISION HISTORY		
Revision	**Date**	**Purpose**
9	-	Revised header data (Added model years) Revised *Technical Background* Revised *Service* (Added image)
8	3/24/2010	Revised *Technical Background* Revised *Service* (Added *Response Codes* section)
7	5/13/2009	Revised *Service* (Step 6)
6	12/15/2008	Revised *Service* (Step 3 – added information concerning use of wireless VAS 5054A transmitter head)
5	11/17/2008	Revised Title to include Repair Group
4	10/21/2008	Revised *Service* (Step 3 – added information concerning Windows power savings settings)

This Technical Service Bulletin (TSB) details the general process for carrying out a Software Version Management (SVM) software update for any TSB or Update.

Troubleshooting information is included in the *Additional Information* section.

Please refer to the upcoming TSBs covering detailed aspects of SVM. They will be listed under group "99".

Technical Background

SVM was developed with the main goal of ensuring each Audi vehicle has the correct electronic control units with the correct software versions installed when it leaves the dealership repair facility.

SVM is a feature of GFF that has a subset of functions or components as seen in Figure 1. These functions are explained below. A VAS 5051B, VAS 5052A, or VAS 6150(A/B/C) diagnostic tool is required to read out the vehicle control unit data and send it to the SVM server (also called an "SVM communication").

Select function or component	
+ Software Version Management (SVM)	
SVM - Specified/actual comparison	
SVM - Direct input: SVM code for problem related update	
SVM - Direct input: SVM code for vehicle conversion	
SVM - Activations	
SVM - communication, checking	

Figure 1. *Subset of SVM functions*

1. **SVM – Specified/actual comparison**

   Goal: This function is designed to ensure all electronic control units installed in the vehicle have the correct part numbers, software versions, coding and parameterization. It will *not* suggest a control unit software update. During this SVM communication, the part numbers and software versions of the actual control units installed in the vehicle will be sent to the SVM servers. This "actual" data is then compared to the "specified" data in the SVM database for a particular vehicle. The specified data stored on the SVM servers is also referred to as the vehicle "reference".

   What an SVM Spec/Actual can do:

   - Document any changes to an electronic control unit's hardware/software part numbers, hardware/software versions, and provide feedback to the user if these changes are accepted or rejected.

   - When new parts are installed, it will also calculate coding changes or parameterization[1] changes. If a "hardware replacement suggestion" is given, then a conflict exists with the vehicle reference for that control unit (i.e. SVM expects a different part number or software version for the control unit in question).

   - As a rule, SVM will not allow a control unit with the same part number as the original part to be installed if the new part contains an older software revision. In this situation, SVM will return a hardware change suggestion[2]. In these special cases a new vehicle reference must be manually set by an Audi Product Support Engineer. Please contact the Technical Assistance Center Helpline if you suspect this is the case.

2. **SVM - Direct Input: SVM code for problem related update**

   Goal: This function performs any additional functions which cannot be performed with an SVM Spec/Actual. Those functions include the following.

   What an SVM code can do:

   - Update the software in a flash-capable control unit if the SVM code[3] is valid for the vehicle.

   - After the software update is completed, an additional SVM Specified/Actual comparison will be performed to calculate a new coding and/or parameterization and to document all control unit changes as a new reference in the SVM database.

   - SVM Codes should not be used to update a control unit without knowing the solution(s) the software update provides. To update control unit software, the technician must first diagnose the condition in the vehicle and find an applicable TSB that provides a valid SVM Code. Randomly trying out multiple SVM Codes wastes time and can sometimes cause conflicts in the SVM database.

   - SVM codes can also be used to document manual software updates to the vehicle's systems, as in the case with MMI Software Package (ZUG) updates. These types of updates are performed manually with a CD/DVD/SDcard. An SVM code for an MMI update documents the changes in the SVM database and provides coding and/or parameterization suggestions. It does not perform any software updates.

SVM codes for MMI Software Package (ZUG) updates will only complete successfully if every control unit is updated to the correct software level. This is especially important when a control unit fails/dies during the manual software update process and is then later replaced, but not updated after it is installed. Since the new replacement control unit was not updated the SVM code will fail. The replaced control unit must be updated prior to running the SVM code.

- SVM Exchange (XCHG) Codes can also be used to aid in the installation of new service parts when an SVM spec/actual cannot code or parameterize the replacement control unit, as with all Audi airbag control units.

It is critical to note SVM XCHG codes must be run *immediately* after a new control unit is installed in the vehicle. If an SVM Spec/Actual is performed instead, it will create an invalid vehicle reference in the SVM database. Once this occurs the SVM XCHG code will not function properly. The only way to resolve this issue is to contact the Technical Assistance Center Helpline to have the vehicle reference manually set. To find the SVM XCHG code, follow the parts bulletin listed in ETKA or search for an applicable Technical Service Bulletin.

3. **SVM - Direct Input: SVM code for vehicle conversion**

Goal: This function allows for a factory approved retrofit of additional control unit(s) using a valid SVM Code for Vehicle Conversion.

- This type of SVM code is documented inside the installation instructions for the control unit and is typically performed as the last installation step. You can identify an SVM code for conversion by the way it is named. They are typically named "050XXX".

4. **SVM – Activations**

Goal: This function is designed to activate additional features or functions within an already installed control unit using an Activation Code and possibly additional PIN codes or Customer codes.

- This function is designed with a security system similar to installing a new operating system on a personal computer. Currently, SVM Activation codes are only being used with navigation map data updates for vehicles with MMI3G/3G+. The customer no longer needs to purchase the Navigation map data. Instead the customer must purchase an "Activation Packet" to unlock the map update in the MMI system. The Activation Packet consists of an Activation Code, Activate Number, and Pin Code. Once the Activation information is used, it becomes permanently tied to the customer's vehicle in the SVM database and cannot be reused with another vehicle.

5. **SVM – communication, checking**

Goal: This function allows the user to check the VAS Tester's SVM online connection status to ensure the tester is communicating with the SVM server.

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Tips:

- [1] *Parameterization* refers to data written into the control unit by SVM to customize the software functionality for the specific vehicle or country of operation. It is often referred to as the "calibration data." It is critical the parameterization is executed anytime it is suggested by SVM to ensure the proper functionality of the control unit. Not all control units are parameterized by SVM.

- [2] It is also important to note that if there are any "Hardware Change Suggestions" any time when an SVM code is run, a new vehicle "Reference" will NOT be set in the SVM database. This is to prevent any bad data from being documented in the reference. This can create an issue where repeat coding and/or parameterization suggestions are given with all subsequent SVM communications (Spec/Actual or SVM code). All "Hardware Change Suggestions" should be resolved prior to an SVM code being executed! Once the hardware issue is resolved, the SVM code must be run again to set the new reference.

- [3] It is important to note that almost all SVM codes will automatically perform a "Quick Test" to verify if the SVM code is valid for the vehicle prior to performing the software update. This is done to speed up the process and provide immediate feedback to the tech of whether or not SVM will be able to code/parameterize the control unit after the software update is completed. If SVM finds an issue it will indicate the SVM code is valid for the vehicle, but cannot be completed.

Production Solution

Not applicable.

Service

1. Address or record any DTCs related to any additional customer concerns before continuing. The reason for this is that any sporadic DTCs could be automatically erased at the end of the SVM communication.

   Tip: Sporadic communication DTCs will be created during the flash procedure and will be automatically erased along with all other pre-existing sporadic DTCs at the end of the SVM test plan.

   Tuning is the addition or modification of any component that causes an Audi vehicle to perform outside the normal parameters and specifications approved by Audi of America, Inc. If you encounter a vehicle with a tuned engine control module (ECM) or transmission control module (TCM), your dealership must do the following before performing any procedure that updates ECM or TCM programming:

   - Notify the owner that their ECM or TCM was found to have been tuned.

   - Notify the owner that any damage caused by the tuning of the ECM or TCM (including any adverse emissions consequences) will not be covered by Audi of America, Inc. warranties.

   - Obtain the owner's written consent (see attached Control Module Tuning form) for any requested repair - under warranty *or* outside warranty - that requires flashing that will automatically overwrite the tuned program.

Tip: Any programming update (flash) may overwrite any tuned ECM or TCM programming.

2. Ensure the TSB stating the condition in the vehicle applies to the customer complaint. Ensure the VAS Tester operator has a valid GeKo user ID and password. Perform only operations *explicitly* stated in the TSB or Update.

3. Verify that the following tester requirements are met

   - VAS 5051B, VAS 5052A, or VAS 6150(A/B/C) with minimum Base CD Version 19.01 with Brand CD 19.36 installed.

   - Tester is plugged into an 110V AC power supply at all times.

   - Connect VAS 5051B and VAS 5052A to the local network via LAN/Ethernet cable.

   - Connect VAS 6150(A/B/C) to the local network via LAN/Ethernet cable. A WiFi connection is not recommended due to the possibility of signal dropouts during the online communication.

   - For B7 A4s after VIN 8E_5A400000, always use the 6017B K Line Adapter to ensure communication to all modules.

   - If the Bluetooth wireless VAS 5054A transmitter head is used in conjunction with a VAS 5052A or VAS 6150(A/B/C) tester, the transmitter head MUST BE connected with a USB cable to the tester.

   - Ensure the Windows power savings are set correctly (disabled) for VAS testers operating with an open Windows interface in which users have access to all regular PC operating system functions (implemented by running the Base V14.00.00 Recovery DVD).

   - VAS 5051B, VAS 5052A, or VAS 6150(A/B/C) with minimum Base CD Version 19.01 with Brand CD 19.36 installed.

   - Tester is plugged into an 110V AC power supply at all times.

   Note:

   If the Windows screensaver activates during a control module software update and the hard drive shuts down as a result of the power settings, a control module failure may result. Refer to Service Circular ATE-08-23 for more information.

   Note:

   Do *not* use a 6017 or 6017A while flashing. Doing so may result in complete control module failure.

4. Verify that the following vehicle requirements are met:

   - Battery must have a minimum no-load charge of 12.5V.

   - Connect vehicle to a powered Audi-approved battery charger. Do *not* use a trickle charger or battery maintainer.

   - Turn off the radio and all other accessories, and when necessary, switch off running lights by applying the emergency brake or through the MMI option menu.

- Turn off any appliances with high electromagnetic radiation (such as mobile phones).

- If communication with a module cannot be properly established, appropriate repairs must be made before attempting SVM. If the tester cannot communicate with a module, the tester cannot flash software onto the module.

5. Enter the SVM code into the User Test Plan by selecting the **Audi Flashing** option at the main tester screen, unless otherwise directed by the TSB or TAC Helpline.
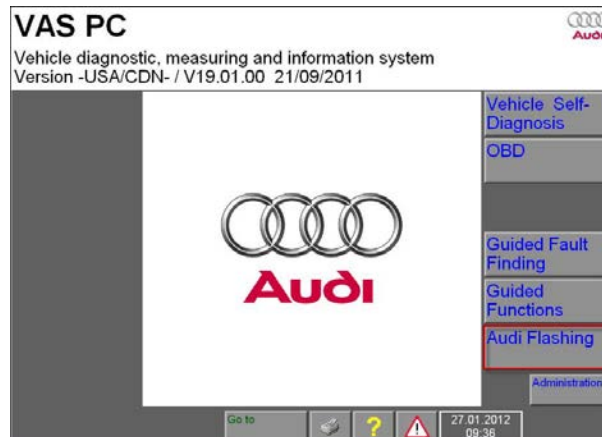

Figure 2. *Audi Flashing.*

Tip: If you do not have the latest Base/Brand CD installed on the tester, then the SVM code may fail and return an "ASM-MCD base system error" because the tester is not capable of reading the software flash file. Starting with the model year 2010, some software files have changed and cannot be read with base tester software level 15 or lower. Level 16 or higher *must* be installed on the tester along with all released patches found on ServiceNet. VAS Tester Patches can be found using → *www.AccessAudi.com* >> *Special Tools and Equipment* >> *VAS Tester Information* >> *Software.*

6. Follow the SVM update procedure and enter the SVM Code found in the appropriate TSB when prompted.

- Enter your GeKo ID when requested. Data will be transmitted to the SVM server, and the server will respond with instructions to continue. (See detailed descriptions in the *Response Codes* table below.) The procedure may include one, or any combination of the following, for one or multiple control modules as specified in the TSB or Update:

Update a control module (flash).

Code a control module.

Parameterize a control module.

Check hardware of a control module.

A hardware change suggestion will occur when SVM does not recognize the control module as valid for the vehicle. As stated before, there is a conflict between specified (i.e. reference) and actual hardware/software part number or software versions. If there is no customer concern and no DTC regarding this control module, report the issue then first ensure you have the correct part installed. Then check to see if there is an applicable TSB indicating an SVM XCHG code is required. Finally, if no part issue is found and no supporting TSB is found, then contact the Technical Assistance Center (TAC) with the required information specified in the *Additional Information* section below. For MMI control units, it is possible the SVM code for feedback documentation was not performed after an update via CD was performed. Always report MMI issues to the TAC *before* attempting a repair.

7. *Always* continue until the following text is displayed: Vehicle conversion/update has been successfully performed. The changes have been stored in the system. Thank you.

    Tip: The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim or if action that is not *explicitly* stated in the TSB or Update is taken.

8. Verify that all steps or special procedures mentioned in the TSB/UPDATE have been carried out. Then finish the test plan and exit GFF via the **Go to** button. Answer the Warranty questions accordingly and print out or save the diagnostic log when prompted.

    Tip: During the flash procedure an estimated time will be shown. This value is not used for actual SRT calculation.

Basic SVM Response Codes

SVM can provide a response code with a repair suggestion or after a successful repair. The response code will appear in the diagnostic log.

Code	Description	Action to be taken
ERP0031I*	The SVM Code was successfully processed but a coding or parameterization of a control unit may still need to be performed.	Perform an SVM Specified/Actual comparison and carry out the coding or parameterization suggestion.
ERP0032I*	The control unit(s) to be updated does not match the requirements for the SVM code.	The control unit installed in the vehicle is not part of the SVM update, the control module installed on the vehicle is not talking on the CAN bus, or the part on the vehicle is older than the original part. Ensure the correct SVM Code was entered, ensure the TSB applies to the vehicle, and check the hardware to ensure it's correct for the vehicle. Perform a hard reset on the module and retry the SVM code. If the hardware/software levels of the replacement part are older than the original part, then contact TAC because a new CARPORT[A] reference will need to be created in the SVM system.
ERP0033I* ERP0042I ERP0044I ERP0046I	Additional coding, parameterization, or a software update may need to be carried out as a result of the SVM code.	Follow the software update, new coding, or parameterization suggestion.
ERP0034I* ERP0045I ERP0048I	A hardware change suggestion from an SVM Code or SVM Specified/Actual comparison.	A control unit installed on the vehicle is not correct for the vehicle for one of the following reasons. Either the control unit is incorrect for the vehicle (compare results of ETKA FI Search versus Part Number search) or the control unit is of an older vintage than the original part installed on the vehicle (old stock service part). Additionally it is possible a software update using a CD was performed on the MMI system without the proper SVM Code being executed after the update. If the part is confirmed to be newer than the original part, then on a rare occasion, the part being installed can be missing from the SVM system. If this is the case, then a hardware change will be suggested since the part is not known to the system. In the event this occurs, please contact TAC so the SVM system can be updated.

ERP0038I	The control unit(s) to be updated does not match the requirements for the SVM code.	The control unit installed in the vehicle is not part of the SVM update or the control module installed on the vehicle is not talking on the CAN bus. Recheck to make sure the correct SVM Code was entered, make sure the TSB applies to the vehicle, and check the hardware to ensure it's correct for the vehicle. Perform a hard reset on the module and retry the SVM code.
ERP0039I* ERP0040I ERP0050I	The SVM Code performed successfully.	All necessary actions taken by the SVM code were performed successfully. Nothing additional is required.
ERP0041I	The SVM Code performed successfully but there are still repair suggestions to other Control Units not featured in the SVM Code update.	A control unit installed on the vehicle is not correct for the vehicle or the SVM Code for document feedback was not performed after a CD update was performed on the MMI system.
ERP0043I	Additional coding and/or parameterization needs to be performed	Follow the new coding or parameterization suggestion.

* The response code is specific to an SVM code that affects the MMI system (i.e. when an SVM code is performed after an MMI CD update, these response codes are returned).

ACARPORT is the database in Germany that contains all control unit information (part numbers and software versions) for each vehicle produced by AUDI AG.

Warranty

This TSB is informational only and not applicable to any Audi warranty.

Additional Information

Checking for Internet Connectivity

With the tester connected to the internet, add and carry out the SVM Communication Test to the GFF test plan which can be found here:

Audi Flashing >> SVM Communication, Checking

-OR-

GFF >> Go To >> Function/Component Selection >> SVM >> SVM Communication, Checking

GeKo Registration and ID Check

To obtain a GeKo user ID and password, follow the instructions in the GeKo ID Request form found here:

→ *www.audi.techliterature.com >> Service >> Documents >> Service and Repair >> GeKo ID Request Form* (located on the 2nd page listing)

To check your GeKo ID, perform the following test from the Tester Startup Screen with the tester connected to the internet:

Administration >> Network Settings >> GeKo Test

Testing the SVM Connection

SVM Communication checking - It will ask for your user ID and Password. If the test fails, change the port, cord, and/or tester and run this test again.

Further Tester Assistance

If any of the listed troubleshooting procedures and/or checks result in errors or yield no solution and further assistance is required, please follow these steps:

1. Utilize the information contained in the *Function Description* button in the tester at the point of the error.
2. Report the problem to the shop network administrator for further investigation.
3. Contact the responsible support team for further assistance:
   - **Service Department Applications** (GeKo, ElsaWeb, and ServiceNet): 866-892-3375.
   - **VAS Tester Software Subscriptions:** Orders need to be placed via → www.audi.techliterature.com
   - **VAS Tester Software Support:** 888-896-1298.

Technical Assistance Center Contact Requirements

Contact the TAC via the Technical Assistance Contact System in ElsaWeb in cases where there is a clear technical issue with the vehicle or response from the SVM system. Always include the following information in the ticket:

- SVM Action Code attempted.
- Control module(s) address word(s) that are in question.
- The *complete* tester diagnostic log from the GFF session.

All parts and service references provided in this TSB are subject to change and/or removal. Always check with your Parts Dept. and service manuals for the latest information.