SIM 65 02 19 2019-08-28

SECURITY IMPROVEMENTS FOR HEAD UNITS

MODEL

F54 (MINI Clubman)	F55 (MINI Hardtop 4 Door)	F56 (MINI Hardtop 2 Door)	F57 (MINI Convertible)
F60 (MINI Countryman)			

Only Model Years 2014 to 2018 are affected.

SITUATION

Security vulnerabilities in MINI infotainment control units have been identified in vehicles equipped with ID4 (either Entry Nav, Entry Media, or NBT) and ID5/ID6 (NBT EVO) head units.

Note: Entry EVO Nav or Entry EVO Media are not affected.

CAUSE

A Chinese cybersecurity research team Tencent Keen Security Lab (“Tencent”) examined various MINI models for potential security vulnerabilities from January 2017 to February 2018. They identified and informed the BMW Group of total of 14 vulnerabilities, five of them remotely via a mobile communications base station that was set up specifically for the research work.

MINI vehicles are not affected by these remotely exploitable vulnerabilities, but by other vulnerabilities requiring an attacker to have physical access to a vehicle.

In addition to the measures already implemented via the ConnectedDrive back end, a software update is available depending on the head unit generation.

CORRECTION

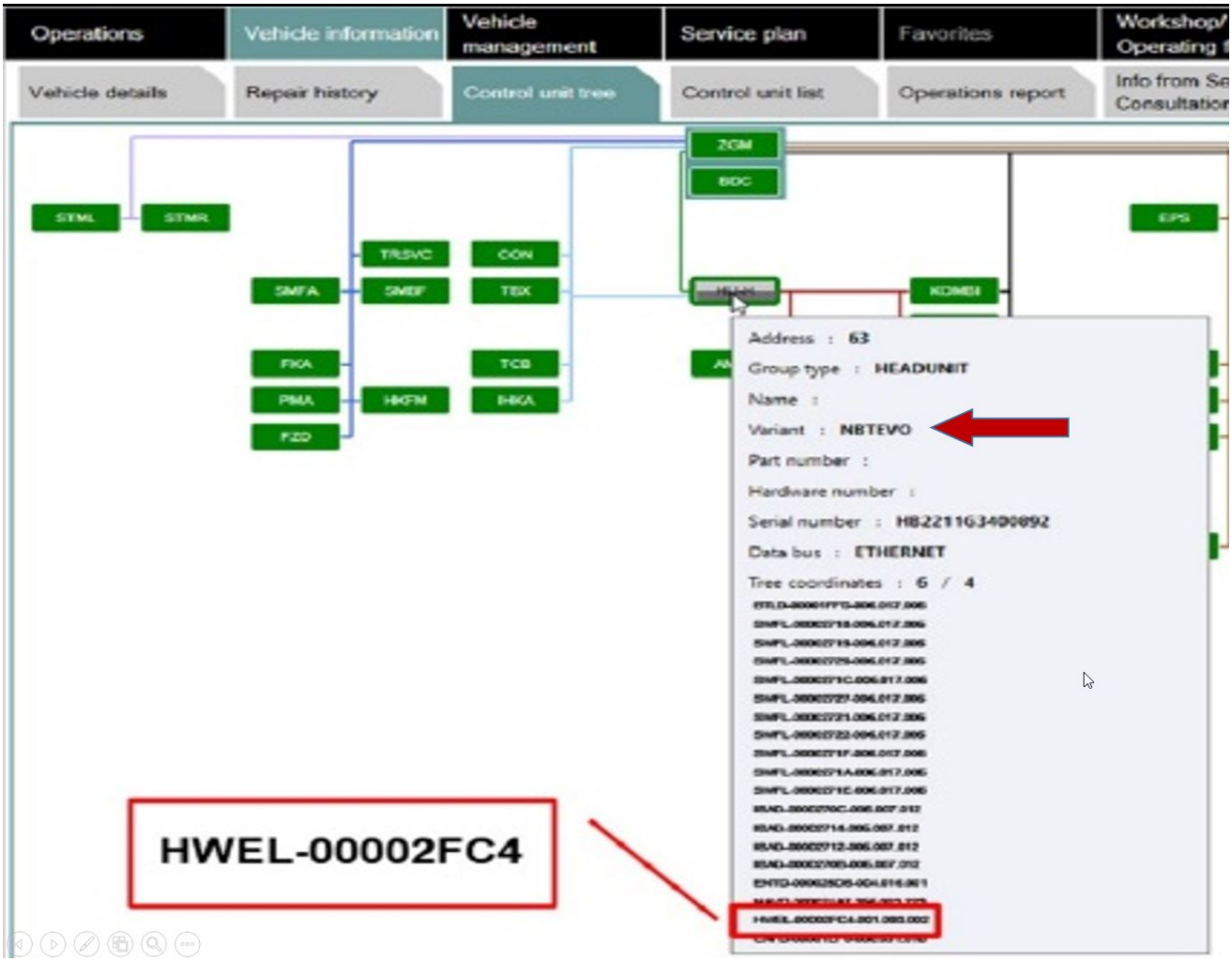
- Check and update head unit software
- Install KISU update (Customer Initiated Software Update) depending on the head unit installed as outlined in the procedure below

A Question & Answer document is attached.

PROCEDURE

Review and perform this procedure only on vehicles equipped with ID4 (either Entry Nav, Entry Media, or NBT) and ID5/ID6 (NBT EVO) head units.

1. Check the I-level of the vehicle (AIR, Key read or Remote Key Read). Make note of the I-level.
2. Perform a vehicle test with ISTA. Once the vehicle test is performed, hover your mouse pointer over the head unit as shown below. This provides the following details:



a. The head unit variant installed in the vehicle (arrow)

b. The HWEL (hardware electronics) number.

- If the vehicle is equipped with an RSE (Rear Seat Entertainment), also check the last numbers starting with “RSE…” in the respective column below.

3. Is the HWEL version readout from the vehicle listed below for the corresponding head unit?

ID4 Entry Nav / Entry Media	ID4 HU-H & HU-H Rear Seat Entertainment (RSE)	ID4 HU-H (EVO)	ID5 / ID6 NBTEVO & Rear Seat Entertainment (RSE)
HWEL-0000116C	HWEL-00000DF5	HWEL-000022E3	HWEL-00002479
HWEL-0000116E	HWEL-00000DF6	HWEL-000022E4	HWEL-0000247A
HWEL-00001703	HWEL-00000DF7	HWEL-000022E5	HWEL-0000247B
HWEL-00001704	HWEL-00000DF8	HWEL-000022E6	HWEL-000026B9
HWEL-00001705	HWEL-00000DFF	HWEL-000022E7	HWEL-000026BA
HWEL-00001706	HWEL-00001018	HWEL-000022E8	HWEL-000026BB
HWEL-000019F9	HWEL-00001019	HWEL-000031DC	HWEL-00002AB8
HWEL-000019FA	HWEL-0000101A	HWEL-000031DD	HWEL-00002AB9
HWEL-000019FC	HWEL-00001294	HWEL-000031DE	HWEL-00002C14
HWEL-0000274C	HWEL-00001295	HWEL-000031DF	HWEL-00002FC2
HWEL-0000274D	HWEL-00001296	HWEL-000031E0	HWEL-00002FC3
HWEL-0000274E	HWEL-000018C2	HWEL-000031E1	HWEL-00002FC4
HWEL-0000274F	HWEL-000018C3		HWEL-00002FC5
HWEL-00002750	HWEL-00001A41		HWEL-00003A09

HWEL-00002753 HWEL-00002754 HWEL-00001170 HWEL-00001707 HWEL-00001708 HWEL-00001709 HWEL-000019F7 HWEL-000019F8 HWEL-000019FB HWEL-00002746 HWEL-00002747 HWEL-00002748 HWEL-00002749 HWEL-0000274A HWEL-0000274B HWEL-00002751 HWEL-00002752 HWEL-00002755	HWEL-00001A42 HWEL-00001A43 HWEL-00001A44 HWEL-00001A45 RSE HWEL-00000E66 RSE HWEL-00000F5E RSE HWEL-00000F5F		HWEL-00003A0A HWEL-00003A0B HWEL-00003A0C HWEL-00003A0D HWEL-00003A0E RSE HWEL-00001EF7 RSE HWEL-00001EFB

a. Yes: Proceed to the steps below relating to the specific head unit installed in the vehicle being serviced.

b. No: No further action is needed because the control module installed in the vehicle is not affected.

Steps for ID4 (Entry Nav, Entry Media, HU-H & HU-H EVO) head units

4. Was the vehicle last treated with ISTA 4.16.1 or higher, and is the I-level 19-03-5xx or higher??

5. YES: The vehicle already has the software that provides the vehicle with added security measures installed. Continue with step 7 below.

6. NO: Program and encode the vehicle using ISTA 4.16.1 or higher (released early March, 2019).

7. Download and install the “Customer initiated update software” (KISU software) in the vehicle.

   a. Refer to the instructions below “updating KISU data”

Steps for ID5 / ID6 NBT EVO (HU-H2) head unit:

8. Was the vehicle last treated with ISTA 4.01.1 or higher and is the I-level 16-07-500 or higher??

9. YES: The vehicle already has the software that provides the vehicle with added security measures. No further actions required.

10. NO: Program the vehicle with ISTA 4.01.1 or higher.

Note:

- ISTA will automatically reprogram and code all programmable control modules that do not have the latest software
- Always connect a MINI approved battery charger/power supply (SI M04 08 09)

- For information on programming and coding with ISTA, refer to CenterNet / TIS / Technical Documentation / Vehicle Programming

Steps for installing the Customer-initiated software update (KISU)

Downloading Customer-initiated software update on to a USB.

1. Prerequisites:
   - USB stick with at least 500 MB of free memory and formatted as FAT16, FAT32 or NTFS filesystem.
   - Access to a computer with internet access.
   - The 17-digit vehicle identification number (VIN) of the customer vehicle.

2. Download the software:
   - Open the website: https://www.bmw.com/update
   - Enter the 17-digit vehicle identification number (VIN).
   - If the update is available, download the software (example: UPD 09042.bin) onto the USB stick.

3. Installation in the vehicle – updating of head unit:
   - Vehicle must have the minimum I-level specified in this bulletin.
   - Connect the USB in the center console of the vehicle.
   - Then install the software in the vehicle ("iDrive settings" / "Software update").

WARRANTY INFORMATION

Covered, one-time as described above, under the terms of the MINI New Passenger Car Limited Warranty.

Defect Code:	**8411900100**	**Fx Security enhancements for head units**

The vehicle is already in the workshop, or if applicable, completion before the first delivery of the vehicle-

Work Pkg	Labor Operation	Description (Plus work)	Labor Allowance
# 1	00 66 667	Programming and encoding the vehicle only (includes connecting an approved battery charger/power supply and performing a vehicle test)	Refer to AIR
Or:			
# 2	00 66 668	Programming and encoding the vehicle (includes connecting an approved battery charger/power supply and performing a vehicle test) and installing customer-initiated software update (KISU data)	Refer to AIR
Or:			
# 3	00 66 669	Installing customer-initiated software update (KISU data) (The vehicle is already at the specified Target integration level or higher)	Refer to AIR

If you are using a Main labor code for another repair, use the Plus code labor operation above that applies instead of the Main labor code.

Or:
The vehicle arrives at your center, this action applies and it has not been previously performed (No other Main work will be performed/claimed during this workshop visit)-

Work Pkg	Labor Operation	Description (Main work)	Labor Allowance
# 4	00 66 090	Programming and encoding the vehicle only (includes connecting an approved battery charger/power supply and performing a vehicle test)	Refer to AIR
Or:			
# 5	00 66 091	Programming and encoding the vehicle (includes connecting an approved battery charger/power supply and performing a vehicle test) and installing customer-initiated software update (KISU data)	Refer to AIR
Or:			
# 6	00 66 092	Installing customer-initiated software update (KISU data) (The vehicle is already at the specified Target integration level or higher)	Refer to AIR

Refer to AIR for the corresponding flat rate unit (FRU) allowances.

During the same workshop visit, **if a vehicle also requires another Technical Campaign or repair that also includes programming and encoding the control units, the programming procedure may only be invoiced one time.**

Claim Repair Comments

Unless additional related/in conjunction work was required (not addressed and/or included in one of the options provided above), then only reference the SIB number and the work package (Pkg) number performed in the RO technician notes and in the claim comments (For example: M65 02 19 WP 1), unless otherwise required by State law.

Programming and Encoding - Vehicle Control Units (RO and Claim Comments Required)

The programming procedure automatically reprograms and encodes all vehicle control modules which do not have the latest software i-level. If one or more control module failures occur during this programming procedure:

> Please claim this consequential control module-related repair work under the defect code listed in this bulletin with the applicable AIR labor operations.

Please explain this additional work (The why and what) on the repair order and in the claim comments section.

For control module failures that occurred prior to performing this programming procedure:

> When covered under an applicable limited warranty, claim this control module-related repair work using the applicable defect code and labor operations (including diagnosis) in AIR.

Supporting Materials
picture_as_pdf M65 02 19 Q_A.pdf

Q&A – Security Improvements for Head Units

1. What vulnerabilities were identified?
Potential vulnerabilities were identified in BMW Group MINI Vehicles by Tencent's Keen Security Lab ("Tencent") during extensive testing and research of the BMW Group ConnectedDrive system and related infotainment components in the vehicle.

2. What Was the Risk?
No drivers or road users were ever at risk. Tencent research showed, that a successful exploitation of the vulnerabilities required among other things, mastering a long, complex exploit chain, access to specific vehicle components, action by the attacker as well as the driver, in order to pose a risk. Vulnerabilities in BMW Group MINI vehicles require a physical connection, which requires an adversary to gain access to the vehicle's interior.

3. How were the vulnerabilities addressed?
Software updates are available at MINI centers to close potential non-critical vulnerabilities and increase the vehicle's overall robustness.

4. Are the vehicles still at risk?
MINI has issued security updates which are available at MINI centers. Please contact your local MINI center for further information.

5. As a customer, how can I find out if my car is affected or if it needs an update?
Only certain models equipped with specific electronic control modules are affected. Vehicles built in model year 2019 and later have the latest updates installed.

Security patches in the form of software updates are available for these non-critical vulnerabilities. Updates are available for the applicable MINI models at MINI centers and can be installed at your next regular service visit.

6. What risks remain after all the countermeasures have been implemented?
The vulnerabilities will no longer pose a risk.